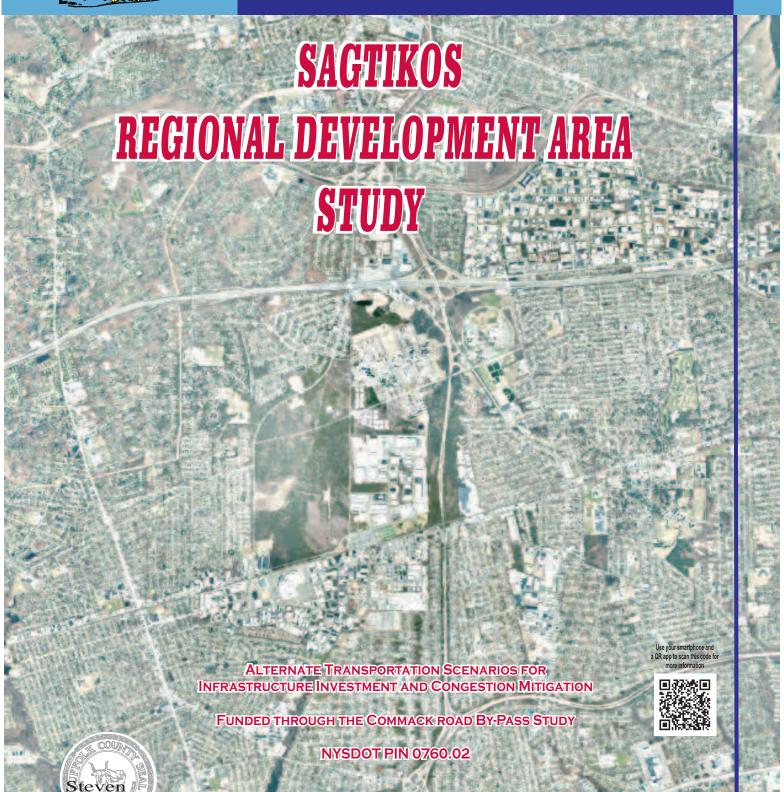
2014

SUFFOLK COUNTY DEPARTMENT OF ECONOMIC DEVELOPMENT & PLANNING



June 2014







Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study



DATE: JUNE 2014



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(AKA Commack Road By-Pass Study)

Alternate Transportation Scenarios for Infrastructure Investment and Congestion Mitigation NYSDOT PIN 0760.02

Prepared by the Suffolk County Department of Economic Development & Planning and the Suffolk County Department of Public Works

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Executive Summary

- Under the Transportation, Community and System Preservation (TCSP) program, part of the 2007
 Safe Accountable Flexible Efficient Transportation Equity Act, Congressman Steve Israel facilitated
 a grant for Suffolk County to formulate short-term and long-term congestion mitigation measures
 for current and proposed development in and around the "Sagtikos Regional Development Zone"
 and to coordinate planning for future land use decisions and transportation solutions in this area.
- Situated strategically at the intersection of the Long Island Expressway and the Sagtikos Parkway, the Sagtikos Regional Development Area is an important employment center with a mix of uses. This area is considered to be one of Suffolk County's major growth and development areas because it contains some of the last major acreage in western Suffolk County available for development or redevelopment. In addition, a development project of regional significance has been proposed for the area.
- Within the study area, there are 12 congestion mitigations that are classified as short-term. These
 mitigations are proposed on five roadways: three Suffolk County roads (CR 4, CR 13, and CR 106),
 one New York State road (NYS 231), and one local road (Long Island Avenue). The predominant
 agency is Suffolk County with 10 congestion mitigation projects. New York State has one short-term
 project on NYS Route 231.
- Each of the congestion mitigations were evaluated according to three evaluation criteria:
 - O Ability to manage growth
 - Ability to protect environmental resources, and
 - Ability to minimize budgetary impacts.



Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

1 - INTRODUCTION



Overview

The federal Transportation, Community and System Preservation (TCSP) program, part of the 2007 Safe Accountable Flexible Efficient Transportation Equity Act, provides grants to states and local governments for planning, developing, and implementing strategies to integrate transportation, community, and system preservation plans and practices. Grants in the TCSP program may be used to improve the efficiency of the transportation system; reduce the impacts of transportation on the environment; reduce the need for costly future investments in public infrastructure; and provide efficient access to jobs, services, and centers of trade. Under the TCSP program, Congressman Steve Israel facilitated a grant award to Suffolk County to formulate short-term and long-term congestion mitigation measures for current and proposed development in and around the "Sagtikos Regional Development Zone" and to coordinate planning for future land use decisions and transportation solutions in this area.

Situated strategically at the intersection of the Long Island Expressway and the Sagtikos Parkway, the Sagtikos Regional Development Area is an important employment center with a mix of uses. The area contains numerous light industrial buildings, a New York State psychiatric hospital, large retail centers and other commercial uses, single family homes, and a major railroad station. This area is considered to be one of Suffolk County's major growth and development areas because it contains some of the last major acreage in western Suffolk County available for development or redevelopment. This unique situation demonstrates the need for regionally-focused thinking about land use and transportation.

Situated strategically at the intersection of the Long Island Expressway and the Sagtikos Parkway, the Sagtikos Regional Development Area is an important employment center with a mix of uses.

This document contains an analysis of a baseline scenario and three alternative scenarios for future land use and transportation. These scenarios consider infrastructure improvements, transportation management strategies (land use regulations), and combinations of both. Each alternative scenario is evaluated based upon its ability to manage growth, protect environmental resources, and minimize municipal budgetary impacts.

The Sagtikos Regional Development Area is unique in that it is situated at the convergence of four municipalities: the Towns of Babylon, Huntington, Islip and Smithtown. In addition to these four towns, several municipalities and government agencies are involved in the planning for this important area. These include the Suffolk County departments of Public Works and Economic Development & Planning, the New

York State departments of Transportation and Parks, and the Metropolitan Transportation Authority/Long Island Rail Road.

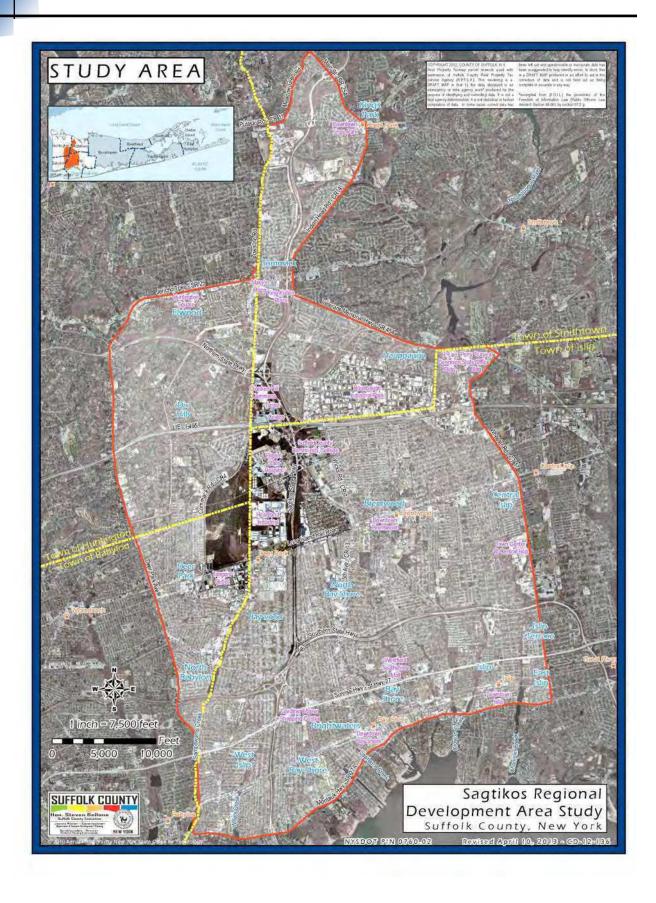
Study Area Boundary

The Sagtikos Regional Development Area encompasses more than 33,000 acres centered on the intersection of the Sagtikos State Parkway and the Long Island Expressway in Suffolk County. *Figure 1, Study Area Map,* displays the boundary of the study area. The northern boundary of the study area is State Route 25A in Kings Park. The western boundary is generally Deer Park Avenue (State Route 231) and the eastern boundary is roughly Wheeler Road / Carleton Avenue (CR 17). The southern boundary is Montauk Highway (State Route 27A). The study area's northern portion is a "panhandle," attaching to the bulk of the study area which is generally south of Jericho Turnpike (State Route 25) and Veterans Memorial Highway (State Route 454). The study area mirrors the study area for a New York State Department of Transportation Study that is scheduled to start work in 2014.

The core of the study area is a 3,500 acre portion in the center of the larger study area. The northern boundary of the core area is the interchange of the Sagtikos Parkway and Northern State Parkway. The western boundary is generally Commack Road (County Road 4) and the eastern boundary is Crooked Hill Road (CR 13) and Wicks Road (CR 7). The southern boundary is Pine Aire Drive and Grand Boulevard. The core area also has a southerly extending "tail" that follows the Sagtikos Parkway southward from Pine Aire Drive to the Southern State Parkway interchange.

Project Purpose and Goals

The purpose of the Sagtikos Regional Development Area Study is to formulate short-and long-term motor vehicle traffic congestion mitigation measures for current and proposed residential, commercial and industrial development in the Sagtikos Regional Development Area and to coordinate planning for future land use desires and transportation solutions around the projected core growth area. Development in the Sagtikos Regional Development Area impacts a range of transportation facilities including the main line of the Long Island Rail Road, major limited access highways such as the Long Island Expressway, and Northern State and Sagtikos State Parkways, and local collector roadways such as Commack Road, Suffolk Avenue, Long Island Avenue, Pine Air Drive, Grand Boulevard and Crooked Hill Road. The goal of the study is to bring together the towns of Babylon, Huntington, Islip and Smithtown, with Suffolk County, the New York State Department of Transportation and the Long Island Rail Road to discuss mitigation measures, guiding principles for future growth in the area and put forth a preferred alternative for related transportation solutions associated with anticipated future development.





Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

2- LITERATURE REVIEW (TASK 1)

LITERATURE REVIEW

The literature review is an important step in the planning process for the study area. The literature search provides a framework and a base upon which to analyze the study area and may guide further recommendations. The literature review attempts to examine the depth to which the study area has been considered by various entities and the range of motor vehicle congestion mitigation solutions at particular snapshots in time combined with visions for the future from various vantage points in the past. The literature review spans some 50 years and specifically focuses on information completed since 2000.

For this report, the literature search was performed in various manners and is presented in various formats. Local and regional planning documents were researched for their relevance to the Sagtikos Regional Development Area. These documents date from the mid-1960s to the present. In addition, environmental impact statements for significant proposed development in the study area, as well as regional transportation plans were researched. After the information was examined, it was summarized and presented in text where possible and in table or chart form where necessary.

One drawback to the literature search is that congestion mitigation proposals from past documents may not translate to today's socioeconomic environment. The needs of communities evolve over time. Some may wonder why a particular mitigation is still being considered while other mitigations are not listed. Moreover, it may be unavoidable that some small reports or studies that contain insights and information may have been overlooked. Information such as this can be added to the study in later phases as needed. While the literature search may not be absolutely exhaustive, the information and studies that have been reviewed provide a solid framework for analysis.

Previous Studies

The 1976 hamlet plan for Brentwood within the Town of Islip Comprehensive Plan recommended that industrial development take place on the entire 420 acres of vacant land that eventually became Heartland Industrial Park. A major overhaul of the road network serving the area was recommended, much of which has not taken place despite the development of the industrial park. An additional road linking the northern portion of Heartland Industrial Park to both Commack Road and to College Road was suggested in this plan. From this new road, it was recommended that additional access to the Sagtikos Parkway be established northeast of the proposed industrial area. The 1976 Plan also recommended that the Sagtikos Parkway interchange at Pine Aire Drive be expanded, and additional access to the Parkway be established from a road linking an upgraded Long Island Avenue west of the Parkway with an upgraded Suffolk Avenue east of the Parkway. A major sports facility was proposed for the property in the Town of Babylon that is now the Edgewood State Preserve. The Plan called for a multi-town solid waste management site to be located in the northeast corner of the Town of Babylon and partly in the Town of Huntington, to collect waste from the Towns of Babylon, Huntington, and Islip. The property is now part of the State of New York Edgewood Preserve. The Plan also recommended that institutional uses continue to occupy the entire Pilgrim State property. The portion of the Pilgrim State property east of Sagtikos Parkway was proposed to be used for recreation and open space purposes.

A 1984 report by Fourth Senate District Citizens Task Force on the Pilgrim/Edgewood State Property made several recommendations about the New York State properties in the area. The report recommended that the Long Island Correctional Facility on the western side of the Pilgrim State Hospital property be closed. It was felt that the entire Pilgrim facility would eventually be closed, and that some of the facility's buildings be converted for use for senior housing, frail elderly housing, and a nursing home for veterans. It was recommended that the Edgewood Hospital buildings be demolished. The report also recommended against the use of the property for a multi-town solid waste management site, but rather that the property should be preserved as open space. The report recommended that Suffolk Avenue be extended westward to meet Long Island Avenue in one straight line to Commack Road, with an overpass at Sagtikos Parkway. Other road and intersection improvements for the area were recommended, and the report stated that the Long Island Railroad station should remain in Deer Park near Deer Park Avenue. The development of the Heartland Industrial Park was supported.

The 1989 Town of Islip Comprehensive Plan Progress Report also suggested that industrial development take place in what is now the Heartland Industrial Park, and that institutional uses continue to occupy the entire Pilgrim State property. The northwestern portion of the Heartland Industrial Park was recommended for institutional use. The portion of the Pilgrim State property east of Sagtikos Parkway was proposed to be used for recreation and open space purposes.

In 1992, the Long Island Regional Planning Board released a report titled The Long Island Comprehensive Special Groundwater Protection Area Plan (SGPA Plan). The report made several recommendations for the 3,125 acre Oak Brush Plains SGPA. According to the report, the Southwest Sewer District service should be extended to serve Pilgrim State and Suffolk Community College, and industrial and commercial establishments should be connected to an extended sewage collection system. It was recommended that the Town of Smithtown acquire and replat portions of the old filed map subdivision on Crooked Hill Road and sell the new larger lots for dry industrial and commercial development.

The 1993 Town of Huntington Comprehensive Plan recommended that the lands within the Sagtikos Regional Development Area in the Town of Huntington remain as parkland and in public use. The Plan also recommended that the single family residential neighborhood within the study area and the surrounding neighborhood would remain medium density residential. The Horizons 2020 Town of Huntington Comprehensive Plan Update retains those same recommendations.

The 1998 Town of Babylon Comprehensive Land Use Plan presented recommendations on land use for every parcel in the Town. There were several recommendations for parcels within the Sagtikos Corridor study area. The recommended land use for property on West Industry Court and East Industry Court off Grand Avenue was light industry. The AIL industrial site off Grand Avenue and surrounding land adjacent to Commack Road (now Home Depot) was to be used for planned industry. The recommended land use for the

Kohl's shopping center site was highway commercial. The recommended land use for property immediately adjacent to Commack Road north of the railroad tracks was neighborhood commercial, with surrounding industrial land to be used for ultra-light industry where activity is contained within buildings rather than outside areas. Uses for the State-owned Edgewood preserve property would remain unchanged under the Plan.

Suffolk County Planning Department 2006 Study

A Suffolk County Executive Order issued in February 2006 directed the Suffolk County Department of Planning to perform an evaluation and analysis of proposed development in five "major growth and development areas" in Suffolk County. These five areas, identified through a collaborative process with the New York Metropolitan Transportation Council (NYMTC), were the Route 110 Office-Industrial Corridor, the Sagtikos Regional Development Zone (with a boundary similar to this study area), Yaphank, the Town of Riverhead, and the Stony Brook High Tech Campus. The result was a study produced by the Suffolk County Department of Planning titled A Review of Selected Growth and Development Areas, Suffolk County, New York, released in August 2006. This report contained a general evaluation and analysis of proposed development in the five selected growth and development areas. Existing major development and development potential were evaluated for these five areas, which are diverse in their locations and development patterns. According to the report, development potential across the five selected areas could yield increases of 284% in retail space, an 82% increase in office space, a 55% increase in industrial space, and a 193% increase in housing units. The report concluded that a comprehensive, multi-jurisdictional coordinated transportation and land use planning effort is needed in Suffolk County and in the five selected growth areas in particular.

In particular, the study determined that the Sagtikos Regional Development Zone, a mostly developed area in Western Suffolk County, could see tremendous increases in development if as-of-right development and proposed development projects were constructed. The amount of office space and the number of housing units in the area could dramatically increase, in addition to increases of 272% in retail space and 118% in the number of hotel rooms, mainly through the redevelopment of previously developed land.

The 2006 study proposed numerous traffic mitigation measures that are applicable to this study. These proposed measures included:

- Construct a ramp connection from Crooked Hill Road to the Long Island Expressway south service road.
- Construct a new north-south driveway between the Kohl's/Home Depot/Wal-Mart shopping center and Motor Parkway.
- Construct a partial or full interchange on the Sagtikos State Parkway at Long Island Avenue.
- Construct one way service roads along the Sagtikos State Parkway between the Long Island Expressway and Long Island Avenue.

The report also recommended that municipalities work more closely together in planning for development, especially in those areas in close proximity to jurisdictional boundaries. The report suggested that inter-municipal agreements be created to increase coordination and effectiveness of comprehensive planning and land use regulation and better protect community resources that span municipal boundaries. Specifically, the report stated that:

- Municipalities should develop comprehensive plans and keep them updated on a regular basis.
 Once the plan is adopted, all future land use decisions, including zoning changes, should be based on the existing comprehensive plan.
- The County should update its comprehensive plan. An updated comprehensive plan would better
 enable the county to effectively address future land use and development in the region and to
 consider the cumulative impacts of development, especially developments of regional
 significance.
- Comprehensive transportation planning should be coordinated between municipalities and based
 on the potential for all development currently allowed by zoning, plus all of the currently proposed
 development within an area. A mechanism should be created whereby state, county, town and
 village transportation planners meet on a regular basis to coordinate their traffic mitigation and
 infrastructure improvements to foster a more seamless regional roadway network.
- All planning for development and redevelopment throughout the County should be in accordance
 with progressive planning principles, such as sustainable development, traditional neighborhood
 design, and smart growth, as promulgated by the American Planning Association.

The study concluded that a more comprehensive, detailed and deliberate study of the area is required so that well-coordinated and well-planned future development can be achieved.

Environmental Impact Statements and Environmental Assessments

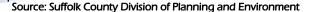
The Suffolk County Planning Commission has adopted specific criteria to determine whether development proposals are regionally significant. Development proposals are termed "Regionally Significant Development Projects" if they satisfy one of the criteria adopted by the Commission. These regionally significant project criteria are outlined in Appendix 1 (Regionally Significant Criteria).

The files of the Suffolk County Planning and Environment's division of regulatory review were researched to obtain information on proposed development projects within the study area and their associated environmental impact statements. Only those regionally significant development projects referred to the County between 2000 and 2013, pursuant to NYS General Municipal Law and the Suffolk County Administrative Code, were reviewed. Project staff consulted with the Suffolk County Department of Public Works and used GIS and the most recent available aerial photographs to determine whether the proposed transportation mitigations cited in the environmental impact statements were completed.

Table 1 describes the seven regionally significant development projects that have been proposed in the study area since 2000.



Town	Project Name	Project Location	Proposed Development	SEQRA Information	Proposed Transportation Mitigations (identified in SEQRA Review)
Smithtown	PJ Venture II, LLC	e/s/o Crooked Hill Rd and w/o Sagtikos State Pkwy	Change of Zone from LI to SCB district for 336,011 SF of retail (Wal-mart, Kohl's & Home Depot) and 2,025 parking spaces on ~43.45 acres	DEIS - Volumes I & II (April 2004) Traffic Impact Study (May 2003)	3 proposed mitigations include: ■Reduce hazard & congestion at intersection of Commack Rd & Crooked Hill Rd ■Realign Crooked Hill Rd 280' s/o existing intersection with Commack Rd and install new traffic signal ■Improve intersection of Crooked Hill Rd at Henry St
Babylon	Deer Park Enterprise, LLC (Tanger Outlet)	n/e/c of Commack Rd and Grand Boulevard	Site Plan & Special Exception for 805,000 SF "Lifestyle" Center and 4,712 parking stalls on 81 acres	DEIS & FEIS (Dec 2005)	•See Appendix 2 for Tanger Outlet's proposed mitigations for roadway, traffic signal and intersection improvements including signage, installation of turning lanes, modifications to phasing of traffic signals, and installation of signals
Babylon	Unicorp National Development / "Deer Park Shopping Center"	n/w/c of Long Island Ave and Commack Road	Change of Zone from Ind H and Res C to Bus E district for 96,749 SF of retail in 6 buildings and 527 parking stalls on 10.27 acres	DEIS (Dec 2005)	See Appendix 2 for Deer Park Shopping Center's proposed mitigations which includ Signal and timing improvements to the traffic signal at the intersection of Commack Rd & Long Island Avenue Installation of the traffic signal on Commack Rd at the main site driveway Construction of the southbound right-turn lane on Commack Road at Long Island Avenue Timing and coordination improvements to the traffic signals along Commack Road from Quail Run to Nicolls Road
Islip	Heartland Town Square	S/W/C/ of LIE & Sagtikos Pkwy; E/S of Commack Rd; E & W of Crooked Hill Rd	C/Z from Res. AAA, Ind. 1, Ind. 2, GSE to PSPRD; in order to build a mixed-use development consisting of ◆9,130,000 SF of residential; 1,030,000 SF of fretail; 4,150,000 SF of office; and 105,000 SF of civic uses; all on 476 acres	Type 1 - DGEIS prep March 2009	See Appendix 2 for DGEIS' proposed mitigations which pointed out existing deficiencies of the present roadway system. Developer is only volunteering to pay 'impact fees' as a contribution towards the partial cost of improving the surrounding transportation infrastructure AND only during Phase I of the 3 phase proposal.
				Updated List of Proposed Mitigations by VHB prep July 2012¤	See Appendix 2 for proposed mitigations; of which 18 mitigations are proposed in 2017 for Phase I and 6 additional mitigations are proposed for build out in 2027.
Islip	Heartland Business Center Expansion	w/o Rodeo Dr, n/o Long Island Ave	Additional build-out of 1.3 million SF of industrial and warehouse space, with parking stalls for approximately 3,120 cars, and 170 trucks on 87 of acres.	FEIS prep April 2002	See Appendix 2 for proposed mitigations which include 6 primary and 3 alternative mitigations
Islip	Central Islip Planned Development District (CIPDD)	Along Carleton Ave, n/ o Southern State Pkwy, s/o Suffolk Ave	2005 Master Plan Update (MPU) for new developmental within the CIPDD consisting of 1,123,400 SF of residential; 309,296 SF of retail; 380,687 SF of industrial/office; 197,000 SF of educational; and 4,806 parking spaces on 345 acres	FSGEIS for CIPDD 2005 MPU prep January 2005	See Appendix 2 for proposed mitigations
			2010 Change of Zone for "Ultimate Game Sports Complex" within CIPDD from PDD Municipal to PDD Recreation for 205,048 SF indoor sports building, 15,000 SF day care facility and 1,010 parking spaces on 36 acres	DSEIS for Ultimate Game Sports Complex prep September 2010	3 proposed mitigations for DPW Drive include: • The western section of the roadway would be realigned to terminate into the Town of Islip Department of Public Works yard. • The eastern section of the roadway would be widened and improved to provide a shared left-through lane and a dedicated right turn lane. • The reconstruction of the roadway would require the replacement or modification of the traffic signal equipment within the roadway.
Smithtown	Lowe's Home Center	Between Commack Road & Crooked Hill Rd. and btw L.I.E North Service & Henry Street	Demo existing Multiplex to build a 187,925 SF home improvement & garden center on 20 acres	Pending	4 proposed mitigations include: • Suffolk County DPW requested a signal at Crooked Hill Road at the entrance to the Costco/ShopRite shopping center. • Suffolk County DPW requested a signal rebuild at Crooked Hill Road at Henry Stree to accommodate new left turn phases • Moving the access along Crooked Hill south to create signalize intersection with PJ Venture (unknown if approved by DPW); and • Moving 1 (easterly) of 2 points of access along the LIE South Service Road westward from the intersection and the abutting lots ingress/egress.



Notes:

- 1) Regionally Significant Projects were identified using Suffolk County Planning Commission criteria
- 2) The above-listed information is compiled from records maintained by Suffolk County Division of Planning and Environment
- 3) ♦ 9,130,000 SF of residential is based on an assumed average residential unit size of 1,000 SF
- 4) + See Appendix 3 for listing and map of proposed/potential development projects from the CIPDD 2005 MPU
- 5) ¤ "The Updated List of Proposed Mitigations by VHB prep July 2012" was provided to SC DPW and not referred to the Suffolk County Planning Commission
- 6)* Heartland Town Square's updated list of 24 proposed mitigations from July 2012 are factored in the total 81 traffic mitigations

Since 2000, a total of seven regionally significant development projects located in four Towns (Babylon, Huntington, Islip, and Smithtown) and consisting of 1,094 acres of land have been identified within the entire study area. These seven projects proposed a total of 19.1 million square feet of development (including retail, commercial, residential and educational) and contained a total of 81 corresponding traffic mitigations, including Heartland Town Square's updated list of 24 proposed mitigations from July 2012.

An estimate of the total completed square footage of regionally significant development was calculated, based on a review of proposals referred to the County pursuant to NYS General Municipal Law and Suffolk County Administrative Code, and a review of the most recent available aerial photographs of the proposed development sites. To date, out of 19.1 million square feet of major proposed development in the study area, a total of 3.35 million square feet is estimated to have been constructed, and 33 out of 81 proposed traffic mitigations have been implemented.

Three of the seven projects (PJ Venture II, Tanger Outlet and Deer Park Shopping Center) proposed a total of 1.2 million square feet of development that has been fully constructed, and 21 out of 25 proposed traffic mitigations have been implemented.

The Central Islip Planned Development District (CIPDD): 2005 Master Plan Update (MPU)) proposed a total of approximately 2 million square feet of new development (which reflects a 2005 Master Plan Update (MPU) of proposed/potential new development and a 2010 Town of Islip Change of Zone referral to the County for "Ultimate Game Sports Complex"). The CIPDD has been partially constructed with approximately 1.6 million square feet of new development. New development projects listed in the 2005 CIPDD MPU which have been constructed to date include: Town Center (shopping center); JOBCO; Benjamin (Islip Landing); Engel Burman; Touro Law Center; and Sunburst Center. Eight of the 19 proposed traffic mitigations related to all proposed new development in the CIPDD have been implemented.

The Heartland Business Center Expansion proposed a total of approximately 1.3 million square feet of new light industrial development within the existing Heartland Business Center. The Heartland Business Center expansion has been partially constructed with approximately 550,000 square feet of new development. Four of the nine proposed traffic mitigations and alternatives for the proposed new development in the Heartland Business Center have been implemented.

Lowe's Home Center proposed a total of approximately 0.2 million square feet of development and is under construction, as are its proposed traffic mitigations.

Heartland Town Square proposed a total of 14.4 million square feet of development in three phases, which represents 75% of the total square footage proposed in the significant development projects in the study area. The Heartland Town Square project is under review and has not been approved, and none of the proposed traffic mitigations solely related to this project have been implemented by the project sponsor.

Regional Transportation Plans, Transportation Improvement Programs, and Funding Earmarks

The core study area includes the following main roads: Long Island Expressway (L. I. E. – I-495), Sagtikos Parkway, Commack Road (CR 4), Crooked Hill Road (CR 13), Wicks Road (CR 7), Community College Road (CR 106), Grand Boulevard, and Pine Aire Drive. The following transportation plans were reviewed: the Transportation Improvement Program (TIP), funding earmarks, Regional Transportation Plans (RTP), and Statewide and Countywide transportation plans since 2000. Of these eight main roads in the core study area, five are included in all of the transportation plans: Long Island Expressway, Sagtikos Parkway, Commack Road, Crooked Hill Road, and Wicks Road.

The following is a review of earmarked funding from Federal, State, Regional, County, and other municipal sources for the Long Island Expressway, Sagtikos Parkway, Commack Road, Crooked Hill Road, and Wicks Road since 2000.

Long Island Expressway (I-495) – Within the study area, \$34.411 million was allocated for the Long Island Expressway for two construction projects at exits 52 and 53. \$1.991 million was allocated for construction design of widening of bridges from exits 49 to 57 to provide standard right shoulder widths. In addition, a Long Island travel and information center was included in the 2004-2006 Transportation Improvement Plan (TIP). During this time, \$1.4 million was drawn down for its preliminary design but construction was not expected until after 2006. Hence, the 2006-2010 TIP included a draw-down of funds amounting to \$38.8500 million in 2008 to begin initial construction. The 2008-2012 TIP included an additional \$2.2 million in construction costs that were added to fiscal year 2009. The 2005 RTP did not mention the travel and information center and there were no earmarks within the study area.

Sagtikos Parkway - Since 2000, \$24.57 million in Federal and State funds have been appropriated for the Sagtikos Parkway corridor. These monies have been directed towards three studies, one safety improvement project, and one reconstruction project.

The New York State 2000-2004 TIP allocated \$3.888 million in state dedicated funds for a median barrier improvement along the Sagtikos Parkway and other state roads. This allocation was expanded by \$5.022 million in the 2004-2008 TIP to \$8.910 million. The NYSDOT Sagtikos Corridor Study was placed on the TIP. This Study identifies operational improvements, both long and short term, for within the Study limits. This project first appeared in 2000 with \$3.5 million set aside for preliminary design. Funding was expanded in the 2011 TIP to include an additional \$10.862 million of National Highway System and New York State dedicated funds. Also in 2011, \$1.3 million in local funds were appropriated for a scoping study that provided for a Sagtikos corridor interim by-pass study of traffic patterns to be completed by 2011. The Sagtikos Parkway was also included as a focal point in the Regional Transportation Plan (RTP) in both 2005 and 2012.

Commack Road (CR 4) – \$8.59 million in project funds have been allocated to Commack Road since 2000. The funding has initiated three reconstruction projects and one study. The New York State TIP for 2004-2008 included \$4.050 million in local funds that were used to reconstruct and improve various portions of the Commack Road right of way. In 2006, \$150,000 in local funding was allocated for the design of reconstruction and resurfacing improvements and removing unused bridge structures on Commack Road between Nicolls Road and Polo Street. The 2008-2012 TIP included \$3.9 million in funding for the execution of the above. A \$490,000 earmark from the U.S. House of Representatives (Congressman Israel) was included for a Commack Road By-Pass study, and is the source of funding for this study.

Crooked Hill Road (CR 13) – \$4.98 million in project funds have been allocated to Crooked Hill Road since 2000. These funds have produced two studies and various congestion improvements. In the 2000 TIP, \$30,000 was allocated to conduct a preliminary analysis of a Fifth Avenue intersection study intended to spur mitigations along other routes. This allocation was increased with an additional \$250,000 in the 2004 TIP. Crooked Hill Road also received \$2.2 million in local funding in the 2010 TIP to further the Fifth Avenue mitigation project. \$2.5 million in Congestion Mitigation and Air Quality (CMAQ) funds were listed in the 2011 TIP for Crooked Hill Road, along with 16 other County roads, and local funding was allocated for a closed loop signal system. These funds were expected to draw down before fiscal year 2011. In addition, Crooked Hill Road appeared in both the 2005 and 2010 RTPs under "vision" projects with an approximate one year time frame.

Wicks Road (CR7) – A total \$17.47 million in project funds have been allocated to Wicks Road since 2000. These funds funded one study, one reconstruction effort, and one traffic mitigation improvement. In 2004, the TIP identified \$4.020 million in local funding for a Wicks Road corridor study and improvement plan. The 2006 TIP included \$3.750 million in local funds for operational improvements on Wicks Road, including adding turning lanes at intersections, signal optimization, and drainage and resurfacing improvements. Wicks Road was not included in the RTP or the Statewide or Countywide transportation plans.

Bus Rapid Transit¹

As part of Suffolk County's commitment to environmentally-conscious smart growth, decreased automobile dependency, and economic growth, Suffolk County Executive Steven Bellone unveiled "Connect Long Island" in 2012, a comprehensive regional transportation and long-term economic development plan. Connect Long Island argues that in order to create an innovation economy and sustainable growth in Suffolk County, we must support Transit Oriented Developments (TODs) and build a 21st century transportation infrastructure that connects TODs to major research and educational institutions and innovation zones for emerging hitech companies.

A primary objective of Connect Long Island is to develop new north-south mass transit connections between key assets, development hubs, and east-west transit modes such as the LIRR's Port Jefferson, Ronkonkoma, and Babylon lines. Long Island lacks a single major north-south mass transit connection, making traveling without a car extremely difficult. Limited transportation options are often the greatest barrier to economic growth, especially in auto-dependent suburban communities. North-south transit connections throughout the County will provide untapped potential to drive economic growth. In Suffolk County, Bus Rapid Transit

¹Portions of this chapter discussing Bus Rapid Transit (BRT) were prepared by Mehwish Mehfooz, an intern at the Suffolk County Department of Economic Development and Planning, Division of Planning and Environment. Although BRT was not part of the original scope of work of the Sagtikos Regional Development Area Study, discussions of BRT are included in this report for informational and exploratory purposes. No effort related to the BRT sections has been allocated to the grant underwriting the Sagtikos Regional Development Area Study

(BRT) could be a cost effective method for creating new north-south connections within the County. For this reason, Suffolk County has commissioned the Suffolk County Bus Rapid Transit Feasibility Study, which represents a logical first step to determine potential BRT routes that would improve transit options in the County.

Major Elements of BRT

According to the National Bus Rapid Transit Institute, BRT is an innovative, high capacity, lower cost public transit solution that can significantly improve urban mobility. This flexible, integrated system uses buses or specialized vehicles on roadways or dedicated lanes to quickly and efficiently transport passengers to their destinations, while offering the flexibility to meet transit demand. BRT systems can easily be customized to community needs and incorporate state-of-the-art, low-cost technologies that result in more passengers and less congestion.

The U.S. Department of Transportation, Federal Transit Administration and National Bus Rapid Transit Institute's (NBRTI) Bus Rapid Transit – Elements-Performance-Benefits brochure offers the following examples of features identifiable with BRT:

- Running Ways lanes in which BRT vehicles operate are improved to help decrease travel time, increase predictability, and increase a sense of permanence. BRT systems can operate on all types of running ways-mixed flow arterials, freeways, dedicated arterial lanes, at-grade transit ways, fully grade-separated surface transit ways, managed lanes, and in tunnels.
- Enhanced Stations Enhanced stations provide additional rider amenities that differentiate BRT from standard bus service. Aesthetically-designed stations make BRT systems attractive and may provide amenities such as weather proof shelters, benches, lighting, ticket vending machines, improved security features, and next vehicle arrival information.
- Innovative Vehicles Stylized and specialized buses can operate along BRT corridors, with emphasis on comfort, aesthetic enhancements, easy access, passenger circulation, and environmentally-friendly propulsion. BRT vehicles are often designed to carry more riders and improve boarding through use of multiple boarding doors or low floors.
- Improved Fare Collection Electronic fare cards, off board fare collection, or proof-of-payment options allow for shorter dwell times and shorter overall travel times.
- Modern Branding and Marketing Distinctive logos, colors, styling and technologies for vehicles and facilities help develop a system identity. BRT services can be marketed as a new bus route or a new tier of service or as part of a multi-modal transit network.
- State of the Art Technologies BRT incorporates Intelligent Transportation Systems (ITS) applications such as Transit Signal Prioritization (TSP), advanced communication systems, automated scheduling and dispatch systems, and real-time traveler information at stations and on vehicles for faster and more convenient trips.1

Benefits of BRT

The Bus Rapid Transit – Elements-Performance-Benefits brochure also highlights the following benefits associated with BRT:

Significantly Decreased Travel Time - Exclusive transit-ways have been shown to achieve an overall travel time savings as high as 55% compared to regular bus services. In Chicago, the proposed Ashland Avenue BRT corridor is expected to cut travel time by 80 percent and connect riders to rail lines, bus lines, major medical centers, and universities. There are several travel time components that BRT systems impact, including:

- Running time the time BRT vehicles and passengers actually spend moving. Running times are dependent on traffic congestion, delays at intersections, and the need to decelerate into and accelerate from stations.
- Station dwell time the time vehicles and passengers spend at stations while the vehicle is stopped to board and alight passengers.
- Waiting and transfer time the amount of time passengers spend waiting for the first transit vehicle and the amount of time they spend waiting for subsequent services required to complete their trip.

Increased Reliability – BRT's use of exclusive transit-ways, level boardings, improved fare collection, and innovative technologies allows for greater reliability. The three main aspects of reliability include:

- Running time reliability the ability to maintain consistent travel times.
- Station dwell time reliability the ability for patrons to board and alight within a set timeframe, with varying loads of passengers at stations, especially as measured across varying levels of congestion at different periods of a service day and on vehicles, thereby minimizing delay at stations.
- Service reliability the availability of consistent service (availability of service to patrons, ability to recover from disruptions, availability of resources to consistently provide the scheduled level of service).

Improved Accessibility – Vehicles, stations, ITS, and fare collection design options can greatly improve the accessibility of BRT system to mobility-impaired and other riders

- · Increase number of jobs accessible by transit
- Increase number of people accessible by transit

Increased Safety and Security – With modern technologies and facilities, customers rate BRT systems safer than regular local bus service

- Boston Silverline passengers rating of "above average" increased by 19%
- Las Vegas 69% of rider rated MAX vehicles as "excellent" and 54% rated MAX safety as "excellent"

Increased Capacity - Because of larger vehicles and greater frequency, BRT systems can offer capacities comparable to other rapid transit modes such as light rail. Seated capacity on BRT vehicles can range from 40 to 85 passengers, while the maximum number of passengers that can be carried per hour per direction can range from 10,000 on arterials to 30,000 on exclusive rights of way.

Increased Ridership - BRT can attract choice riders (or discretionary riders, with choice of different transit mode like the automobile) and greatly increase corridor ridership. Ridership gains of 20% to 96% in BRT corridors have been noted in practice

 According to a U. S. GAO report on Bus Rapid Transit, 13 of the 15 project sponsors that provided ridership data reported increases in ridership after 1 year of service

Lower Capital Cost - BRT systems can use less costly or existing infrastructure and reduce fleet requirements with better vehicle utilization. Overall, capital costs are less than other rapid transit modes such as light rail (LRT) or heavy rail (HRT).

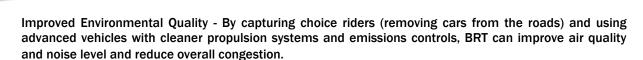
- Eugene, Oregon BRT costs 4% of comparable light rail system
- Curitiba, Brazil \$200K per kilometer as compared to \$20M per kilometer for a light rail system

Attracts Private Investment – A study by the U.S. Government Accountability Office titled "Bus Rapid Transit Can Contribute to Economic Development" (July 2012) highlights the economic benefits of BRT.

- Pittsburgh \$300M in development around stations
- Ottawa, Ontario \$700M in development around stations
- Cleveland \$114 in private investment for every \$1 spent on the BRT system

Increases Property Values – Case studies show a positive correlation between property values, tax base, and distance to BRT stations.

- Boston Tax base grew by 247% along BRT corridor in comparison to the 146% city-wide average.
- Brisbane, Australia 20% increase in residential property values near BRT stations



Encourages Transit-Supportive Land Use – with supportive land use, BRT can attract development and increase economic activity around transit centers. BRT improvements often result in the creation of enhanced, pedestrian friendly communities.

BRT Conclusions

In a lower density, suburban context, it is critical that BRT systems make the right connections. In Suffolk County, BRT can connect key County assets and other transit modes like the LIRR to improve mobility, relieve congestion, encourage TODs, and create sustainable economic growth.

In the Long Island Index's recent report titled "How the Long Island Railroad Could Shape the Next Economy," a BRT case study illustrates the potential for future economic growth. The report states that "in the Minneapolis/St. Paul region, a business-led alliance commissioned Cambridge Systematics to estimate the return on a proposed \$4.4 billion investment to add three light-rail lines and expand bus rapid transit (BRT) in the region's transit system. The direct benefits ranged from \$6.6 to \$10.1 billion over a 15-year period for a scenario that assumed no additional growth around the transit network to \$9.1 billion to \$13.9 billion for one that assumed more transit-oriented development. In both cases, the return is likely to be much greater since jobs and income will continue to grow past the 15-year period, and because it used conservative assumptions about land use changes and energy costs."

In a region saturated with automobiles, aging infrastructure, and local governments struggling to fund infrastructure improvements, less expensive forms of mass transit such as BRT make sense and may be crucial to the region's economic future.

Aerial Photography and Photo Inventory

Both the Suffolk County Division of Planning and Environment and the Suffolk County Department of Information Technology (IT) possess aerial photographs from multiple years. Some of the photos are in digital format, and some are in actual contact print format.

The Suffolk County Division of Planning and Environment has aerial photos in digital format for 1928. The Suffolk County Department of IT has digital aerial photos for the following years: 1947, 1962, 1969-70, 1978, 1984, 2001, 2004, 2007, and 2010. These are all available on Suffolk County iMap website. In addition, oblique aerial photos from 2006 and 2011 are available through Pictometry software and administered by IT. In contact print format, Suffolk County Planning has aerial photos for 1928, 1966, 1970, 1974, 1976, 1980, 1983, 1984, 1989, 1996, and 1999 on photographic paper.

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For this study, these aerial photos were studied to determine changes in land use patterns within the study area through the years. For the maps contained in this report, 2010 aerial photographs were utilized.

A photo inventory of congestion mitigation sites can be found in Appendix 4.



Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

3 - EXISTING CONDITIONS (TASK 2)

EXISTING CONDITIONS

The Sagtikos Regional Development Area includes 52.4 square miles or 33,565 acres and is situated around the intersection of the Sagtikos State Parkway and the Long Island Expressway in Suffolk County. The study area accounts for 5.7% of the entire land area, 27% of the private sector jobs, and 22% of the total population of Suffolk County. The study area encompasses portions of four Suffolk County Towns: Huntington, Smithtown, Babylon, and Islip and includes a wide variety of development types and environmental conditions.

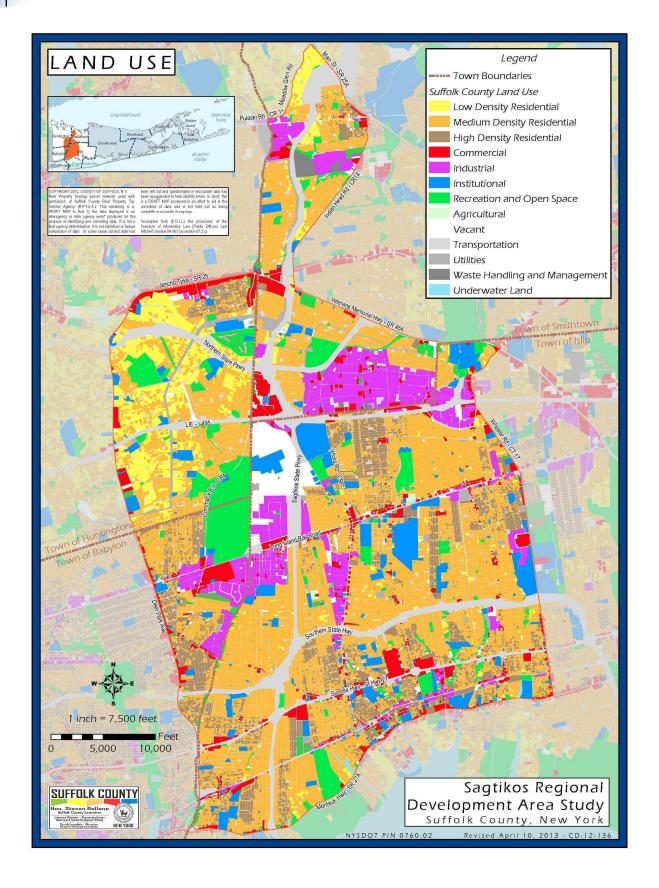
Land Use

The Sagtikos Regional Development Area contains a variety of land uses but is dominated by residential uses. It also contains a variety of commercial businesses and industrial buildings, preserved open space, and Pilgrim State Hospital. The study area also includes various institutional buildings, such as public schools and the Brentwood campus of Suffolk County Community College.

The Suffolk County Division of Planning and Environment has determined the primary land use of each parcel of land in the County. A detailed land use analysis was performed for the Sagtikos study area. The land use inventory conducted for the study area was prepared on a Suffolk County Real Property Tax Map base and verified as of 2010 using existing records of the Suffolk County Division of Planning and Environment and aerial photographs from 2010.

There are 13 categories of land use are used for regional planning purposes by Suffolk County. These land uses are: low density residential, medium density residential, high density residential, commercial, industrial, institutional, recreation & open space, agriculture, vacant, transportation, utilities, waste handling & management, and surface waters. Each parcel in the study area was assigned one of the 13 general land use categories. Definitions and examples of the 13 land use categories are as follows:

- Low density residential one housing unit per acre or more, generally single family homes;
- Medium density residential between one and five housing units per acre, generally single family homes;
- High density residential five of more housing units per acre, sometimes single family homes but often apartment or condo complexes;
- Commercial businesses, such as retail stores, personal services, hotels, office buildings, marinas, and commercial amusement facilities:
- Industrial includes manufacturing, warehouses, and mining;
- Institutional includes schools, religious buildings, government buildings, and hospitals;
- Recreation & open space includes golf courses, parks, cemeteries, hunting clubs;



- 1
- Agriculture includes cropland, orchards, and greenhouses (regardless of preservation);
- Vacant undeveloped land;
- Transportation road rights of way, railroad rights of way, and recharge basins;
- Utilities includes electric and gas transmission, water supply, and telecommunications;
- Waste handling & management includes waste disposal, landfills, and sewage treatment;
- Surface waters includes land under water.

A significant amount of acreage in several land use categories can be found in the study area. *Table 2* shows the sum of the acreage contained in each land use category, for each town in the study area.

Table 2. Existing Land Use in Acres, Sagtikos Regional Development Area, 2010

Land Use Category	Babylon	Huntington	Islip	Smithtown	Study Area Total
Low Density Residential	4.7	1,481.0	210.2	312.0	2,008.0
Medium Density Residential	699.3	1,978.2	8,959.9	2,018.6	13,655.9
High Density Residential	517.8	192.1	2,150.8	130.1	2,990.8
Commercial	220.2	242.3	979.1	427.5	1,869.1
Industrial	440.8	16.6	1,276.9	1,353.2	3,087.5
Institutional	74.2	326.7	1,835.9	120.2	2,357.0
Recreation & Open Space	570.7	852.5	858.3	384.4	2,665.8
Agriculture	0	11.8	23.1	0	34.9
Vacant	19.1	92.6	922.3	97.3	1,131.3
Transportation*	87.9	431.1	1,345.9	1,220.3	3,085.1
Utilities	9.1	171.9	174.4	179.5	534.9
Waste Handling	0	0	0.8	116.4	117.1
Surface Waters	0	0	27.8	0	27.8
TOTAL	2,643.7	5,796.8	18,765.4	6,359.3	33,565.3

^{*}Includes land in road rights-of-way that are not separate parcels.

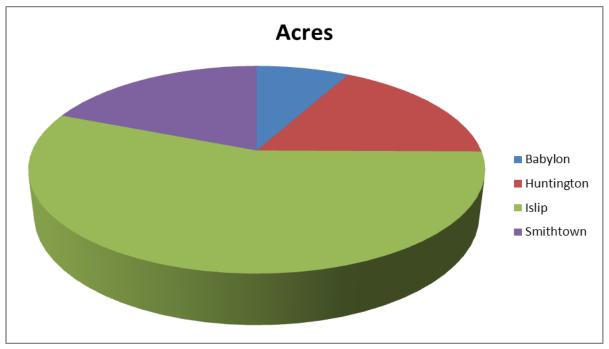
Note: Figures may not add to total due to rounding.

Source: Suffolk County Division of Planning & Environment

The study area includes 33,565 acres (52.4 square miles) and contains nearly 65,000 separate land parcels. The study area comprises 5.7% of the total area of Suffolk County. The Town of Islip contains the majority of the land in the study area, more than 18,000 acres. Smithtown is next with more than 6,000 acres, followed by Huntington with more than 5,000 acres, and then Babylon with 2,600 acres. The chart

below displays each town's relative share of acreage in the study area.

Sagtikos Regional Development Area Study, Acreage by Town.



The study area is dominated by medium density residential land use, which means residential lots between 0.2 acres and 1.0 acres in size. In the study area, medium density residential use accounts for nearly 40,000 lots totaling more than 13,000 acres. There are also several other significant land use categories in the study area. The categories of industrial, transportation, high density residential, open space, institutional, low density residential, and commercial each comprise between 1,800 and 3,100 acres of the study area.

Table 3 displays the percentage breakdown of land use within each town in the study area, and for the study area as a whole, in order of most to least common land use in the study area.

Table 3. Existing Land Use in Order of Percentage, Sagtikos Regional Development Area, 2010

Land Use Category	Babylon	Huntington	Islip	Smithtown	Study Area Total
Medium Density Residential	26%	34%	48%	32%	41%
Industrial	17%	0%	7%	21%	9%
Transportation*	3%	7%	7%	19%	9%
High Density Residential	20%	3%	11%	2%	9%
Recreation & Open Space	22%	15%	5%	6%	8%
Institutional	3%	6%	10%	2%	7%
Low Density Residential	0%	26%	1%	5%	6%
Commercial	8%	4%	5%	7%	6%
Vacant	1%	2%	5%	2%	3%
Utilities	0%	3%	1%	3%	2%
Waste Handling	0%	0%	0%	2%	0%
Agriculture	0%	0%	0%	0%	0%
Surface Waters	0%	0%	0%	0%	0%
TOTAL	100%	100%	100%	100%	100%

^{*}Includes land in road rights-of-way that are not separate parcels.

Note: Figures may not add to total due to rounding.

Source: Suffolk County Division of Planning and Environment

Of the entire study area, 3% or 1,131 acres is vacant unprotected land. The vacant category is unprotected land which currently has no development. Therefore, the study area is 97% developed.

A full 56% of the study area acreage is developed with residential uses. (41% of the study area is developed with medium density residential uses, 9% is high density, and 6% of the study area is low density residential.) The second most common land use in the study area is industrial, totaling 3,087 acres, or 9% of the study area. The largest block of industrial land in the study area is in the Hauppauge Industrial Park in the Town of Smithtown, but there are other large industrial areas in the study area in Brentwood, Bay Shore, and Deer Park. The third most common land use in the study area is transportation, which totals 3,085 acres or 9% of the study area. Transportation uses include all roadway and railroad rights-of-way, and highway maintenance facilities. Because the Sagtikos Parkway, Northern and Southern State Parkways, and the Long Island Expressway all cross the study area, this result is not surprising.

High density residential uses account for 2,990 acres or 9% of the study area. High density residential uses are those of five or more units per acre. In the study area, there are numerous apartment complexes, cooperatives, and condominiums that fall into this category, along with single family or multi-family homes on parcels smaller than 0.2 acres. This type of housing is located throughout many parts of the study area.

Recreation & open space uses are the next most common land use in the study area, totaling 2,665 acres or 8% of the study area. There are numerous town, county, and state parks in the study area, the largest of which is the New York State Edgewood Preserve. Institutional uses comprise 2,357 acres or 7% of the study area. Various religious, educational, and government uses make up this category, including Suffolk County Community College and the New York State Pilgrim Psychiatric Center in Brentwood.

Low density residential, including homes on one acre or larger lots, added up to 2,008 acres or 6% of the study area. This use is found primarily in Dix Hills in the study area. Commercial uses total 1,869 acres in the study area, or 6% of the total area. The study area includes several significant retail corridors, including Jericho Turnpike in the Town of Huntington, Deer Park Avenue in the Town of Babylon, Sunrise Highway and Montauk Highway in the Town of Islip, the Crooked Hill Road area in Commack (Town of Smithtown), and Tanger Outlet Center and surrounding retail properties in Deer Park (Town of Babylon).

The "vacant" category totals 1,131 acres or 3% of the study area. This category is comprised primarily of former Pilgrim State Hospital lands in the Town of Islip, which have been sold and cleared of buildings. Other less significant vacant lands are scattered throughout the study area, most significantly the undeveloped portion of the Heartland Business Center Industrial Park in the Town of Islip. All the other land use categories each account for less than 2% of the study area.

The core of the study area covers 3,538 acres (5.5 square miles), approximately 10% of the entire study area. Land use in the core study area is much less dominated by residential uses. In the core study area, the most common land use is recreation & open space (23% of the acreage), followed by vacant (19%) and transportation (19%). Industrial uses (primarily the Heartland Business Park) and institutional uses (Pilgrim State Hospital and Suffolk Community College) are also significant in the core of the study area.

Employment

The U.S. Census Bureau's Zip Code Business Patterns report includes information about total business employment, by zip code. It is important to note that government employment is not included in these figures, only employment by businesses with payroll. Therefore, for example, employment at the Pilgrim State Hospital in Brentwood would not be included in these figures. As of this writing, the most recent Zip Code Business Patterns report includes data for 2010.

The zip code is the smallest level of geography for which data on employment and businesses is available. The core of the study area contains essentially three zip codes:

- Brentwood
- Commack
- Deer Park

The wider study area includes 13 additional zip code areas*:

- Bay Shore
- Brightwaters
- Central Islip
- Dix Hills
- East Islip
- East Northport
- Hauppauge
- Islip
- Islip Terrace
- Kings Park
- North Babylon
- Northport
- West Islip

*The study area includes only relatively small residential sections of the communities of East Islip, Islip Terrace, and Northport, which are italicized in the list above. For this reason, these areas are excluded from the analysis of businesses and employment.

In 2010, there were 141,074 persons employed at businesses in the 13 zip codes that contain the Sagtikos Regional Development Area. This figure represents 27% of all employment in businesses in Suffolk County. By far the largest employment center in the study area is located in Hauppauge, where 35,000 people work in business establishments, followed by Bay Shore with nearly 23,000 employees. In comparison, Melville and Farmingdale (known as the Route 110 Corridor) to the west of the study together contain nearly 78,000 private sector payroll employees. See *Table 4*.

Table 4. Employment in Business Establishments by Zip Code Community, 2005-2010

Place	2005	2006	2007	2008	2009	2010	5-Year Change
Bay Shore	25,976	25,749	26,950	26,054	23,936	22,901	-12%
Brentwood	12,380	12,778	12,682	12,684	11,920	12,096	-2%
Brightwaters	1,101	804	NA	NA	NA	921	-16%
Central Islip	7,322	6,721	6,423	6,696	5,535	5,306	-28%
Commack	15,502	15,446	15,652	16,083	15,909	15,153	-2%
Deer Park	13,268	13,722	13,905	13,470	13,621	13,055	-2%
Dix Hills*	18,482	18,821	17,428	17,189	16,068	15,140	-18%
East Northport	5,438	5,685	6,523	6,433	6,104	5,923	+9%
Hauppauge	43,205	45,099	43,314	43,797	38,005	35,070	-19%
Islip	2,635	2,486	2,801	2,566	2,347	2,671	+1%
Kings Park	2,844	3,074	2,969	3,125	2,913	2,718	-4%
North Babylon	2,599	2,456	2,414	2,593	2,446	2,500	-4%
West Islip	7,874	8,006	8,194	8,378	8,267	8,541	+8%
AREA TOTAL**	157,525	160,043	159,255	159,068	147,071	141,074	-10%
Suffolk County	555,718	571,482	573,823	575,030	550,192	531,776	-4%

Source: U. S. Census Bureau, Zip Code Business Patterns

NA - Not Available. Data not disclosed for Brightwaters.

Between 2005 and 2010, which includes the major recession of 2007-2009, business employment in most of the communities in the study area decreased, some significantly. In the study area overall, employment declined by 10% between 2005 and 2010. At the same time, employment in businesses in Suffolk County decreased by 4%. The steepest employment declines in the study area occurred in Central Islip (-28%) and Hauppauge (-19%). Increases in employment occurred in East Northport (+9%) and West Islip (+8%).

The core study area communities of Brentwood, Commack, and Deer Park suffered relatively smaller employment losses between 2005 and 2010, but still lost 2% of business employment in the period.

Number of Businesses

Zip Code Business Patterns also includes information about the number of business establishments with payroll, by zip code. In the 13 zip code areas that make up the study area, in 2010 there were 12,782 businesses. Of the 16 zip codes, the largest number of businesses are located in Dix Hills/Huntington Station, 1,936 establishments. Bay Shore had 1,599 businesses and Hauppauge had 1,505 businesses. Deer Park and Commack also had a significant number of businesses. In comparison, the Route 110 corridor (Farmingdale and Melville zip codes) had 3,793 businesses. See Table 5.

^{*}Includes Huntington Station

^{**}Excludes Brightwaters, because data for Brightwaters was not available in 2007, 2008, and 2009.

Table 5. Number of Business Establishments by Zip Code Community, 2005-2010

Place	2005	2006	2007	2008	2009	2010	5-Year Change
Bay Shore	1,648	1,634	1,624	1,596	1,599	1,599	-3%
Brentwood	697	675	698	695	673	673	-3%
Brightwaters	101	109	104	103	99	101	0
Central Islip	500	508	499	492	483	472	-6%
Commack	1,300	1,272	1,257	1,248	1,219	1,216	-6%
Deer Park	1,331	1,349	1,358	1,368	1,392	1,392	+5%
Dix Hills*	1,908	1,900	1,921	1,907	1,915	1,936	+1%
East Islip	414	422	438	430	402	417	+1%
East Northport	912	895	906	899	871	874	-4%
Hauppauge	1,528	1,545	1,548	1,536	1,500	1,505	-2%
Islip	372	365	373	362	353	358	-4%
Islip Terrace	214	212	205	211	201	199	-7%
Kings Park	415	408	395	391	401	393	-5%
North Babylon	368	358	341	337	318	323	-12%
Northport	757	745	740	756	753	743	-2%
West Islip	607	607	598	613	601	581	-4%
AREA TOTAL	13,072	13,004	13,005	12,944	12,780	12,782	-2%
Suffolk County	47,611	47,710	48,674	48,351	47,573	47,742	0

Source: U. S. Census Bureau, Zip Code Business Patterns

Between 2005 and 2010, the number of businesses overall in the 16 zip code areas decreased by 2%, while the number of businesses in all of Suffolk County held steady during the same period. This period includes the major recession of 2007-2009. The only significant increase in the number of businesses took place in Deer Park, with an increase of 5% in the five year period. Part of the increase in the number of businesses in Deer Park can be explained by the opening of the Tanger Outlet Center there in 2008. Between 2005 and 2010, the largest decline in the number of businesses occurred in North Babylon (-12%). Most other areas saw declines of between 2% and 7% in the number of businesses. The core study area communities of Brentwood, Commack, and Deer Park suffered slightly smaller losses in the number of business between 2005 and 2010, but overall these communities still lost 1% of businesses in the period.

In 2010, in all 16 zip codes that make up the study area, there were 12,782 businesses with payroll. Of those, the largest number (1,849 or 14% of all businesses) were in the retail trade industry; followed by 1,595 businesses in the professional, scientific & technical services category (12%); 1,565 construction



businesses (12%); and then followed by 1,291 businesses in the health care & social assistance category (10%). See $Table\ 6$.

Table 6. Percentage of Businesses by Industry Category, 2010

Industry	Total of Study Area Zip Codes	Suffolk County
Forestry, Fishing, and Agriculture	0%	0%
Mining	0%	0%
Utilities	0%	0%
Construction	12%	14%
Manufacturing	5%	4%
Wholesale Trade	8%	7%
Retail Trade	14%	14%
Transportation & Warehousing	2%	2%
Information	1%	1%
Finance & Insurance	5%	5%
Real Estate & Rental & Leasing	3%	3%
Professional, Scientific & Technical Services	12%	12%
Management of Companies & Enterprises	0%	0%
Admin, Support, Waste Mgmt., Remediation Services	7%	7%
Educational Services	1%	1%
Health Care and Social Assistance	10%	10%
Arts, Entertainment & Recreation	1%	2%
Accommodation & Food Services	7%	7%
Other Services (except public administration)	10%	9%
Industries not classified	0%	0%
TOTAL*	100%	100%

Source: U. S. Census Bureau, Zip Code Business Patterns, 2010.

The makeup of businesses in the 16 zip codes is quite similar to that of Suffolk County as a whole. However, the study area's core three zip codes have larger proportions of businesses in the following categories than in the County as a whole: retail trade, manufacturing, and wholesale trade. These figures reflect the relatively high proportion of land used for retail and light industrial purposes in the core three zip codes .

^{*}Totals may not add to 100% due to rounding.

Residential Development and Demographics

To analyze population, housing, and other demographics in the study area, the use of Census data is required. The study area includes more than a dozen hamlets, known as "Census Designated Places" (CDPs) for census data purposes. Because the boundaries of the study area don't conform exactly to these CDPs, only CDPs which roughly conform to the study area's boundary were included in the analysis. In other cases, the smallest level of geography for which there is data available is the town level; therefore, data is compiled for the four towns that include the study area.

Fourteen CDPs were included in the analysis of the number of housing units and population of the study area. Two of the CDPs are located in the Town of Babylon, nine are located in the Town of Islip, one is in the Town of Huntington, one in Smithtown, and one (Commack) lies in both Huntington and Smithtown.

Housing Units

The study area contained 102,000 housing units in 2010. This figure represents 18% of all housing units in the County. The vast majority of the housing units within the study area are single family homes. A small remainder of the population in the study area lives in "group quarters" settings, which include institutions, dormitories, and long-term care facilities.

Table 7 details the number and growth in the number of housing units in the communities in the study area.



Table 7. Housing Units in the Study Area, 1990-2010

Geographic Area	1990	2000	2010	Change, 1990-2000	Change, 2000-2010
Town of Babylon portion:					
Deer Park	9,616	9,698	9,715	1%	0%
North Babylon	6,123	6,271	6,378	2%	2%
Town of Babylon portion total	15,739	15,969	16,093	1%	1%
Town of Huntington portion:					
Commack (HU part)	3,731	3,966	4,182	6%	5%
Dix Hills	7,698	8,057	8,529	5%	6%
Town of Huntington portion total	11,429	12,023	12,711	5%	6%
Town of Islip portion:					
Bay Shore	7,938	8,639	9,663	9%	12%*
Baywood	2,214	2,317	2,272	5%	-2%
Brentwood	12,023	13,039	14,202	8%	9%**
Brightwaters village	1,150	1,144	1,156	-1%	1%
Central Islip	7,697	9,189	9,961	19%	8%
Islip	6,458	7,026	6,664	9%	-5%**
North Bay Shore	3,464	3,992	4,627	15%	16%*
West Bay Shore	1,788	1,789	1,818	0%	2%
West Islip	8,657	9,044	9,266	4%	2%
Town of Islip portion total	51,389	56,179	59,629	9%	6%
Town of Smithtown portion:					
Commack (SM part)	7,572	7,858	7,956	4%	1%
Kings Park	5,591	5,574	6,469	0%	16%
Town of Smithtown portion total	13,163	13,432	14,425	2%	7%
STUDY AREA TOTAL	91,720	97,603	102,858	6%	5%

^{*}Place had a slightly larger land area in 2010 compared to 2000.

 $Source: U. \ S. \ Census \ Bureau \ (2010 \ Census), \ Suffolk \ County \ Division \ of \ Planning \ and \ Environment$

The total number of housing units in the CDPs that make up the study area increased by 6.4% between 1990 and 2000, and then by 5.4% between 2000 and 2010. All of the CDPs in the study area had an increase in the number of housing units between 1990 and 2010. The largest increases occurred in the Town of Islip, particularly in Brentwood, Central Islip, and North Bay Shore.

^{**} Place had a slightly smaller land area in 2010 compared to 2000.

Residential Building Permits

The smallest level of geography for which building permit data is available is the incorporated town or incorporated village level. Since 2006, the number of new housing units authorized by building permit has decreased in the four towns that include the study area, and in Suffolk County as a whole. However, in 2013 there was a significant increase in building permits. It should be noted that this four town area is significantly larger than the study area. *Table 8* details the building permit activity in the four towns that include the study area since 2006.

Table 8. Housing Units Authorized by Building Permit, 2006-2013

Town	2006	2007	2008	2009	2010	2011	2012	Jan-Jun
Town of Babylon	213	269	342	52	22	19	65	22
Town of Huntington	175	139	78	84	69	47	66	75
Town of Islip	363	195	158	194	122	82	50	48
Town of Smithtown	161	100	151	79	44	37	44	26
Four Town Total	912	703	729	409	257	185	225	171
SUFFOLK COUNTY	2,573	2,126	1,396	990	971	856	1,061	546
Four Towns as a % of County	35%	33%	52%	41%	26%	22%	21%	31%

Source: U. S. Census Bureau, Prepared by Suffolk County Division of Planning and Environment

Population

The study area has a substantial population. The 14 CDPs that comprise the study area contained more than 328,000 residents in 2010, representing 22% of the entire Suffolk County population. The largest population in the study area was found in Islip Town (202,000), including the community of Brentwood (which had 60,000 residents in 2010). Brentwood alone accounts for 18% of the entire population in the study area. See *Table* 9.



Table 9. Resident Population in the Study Area, 1990-2010

Geographic Area	1990	2000	2010	Change, 1990- 2000	Change, 2000- 2010
Town of Babylon portion:					
Deer Park	28,840	28,316	27,745	-2%	-2%
North Babylon	18,041	17,877	17,509	-1%	-2%
Town of Babylon portion total	46,881	46,193	45,254	-1%	-2%
Town of Huntington portion:					
Commack (HU part)	12,210	12,372	12,537	1%	1%
Dix Hills	25,849	26,024	26,892	1%	3%
Town of Huntington portion total	38,059	38,396	39,429	1%	3%
Town of Islip portion:	•		'		
Bay Shore	21,279	23,852	26,337	12%	10%*
Baywood	7,351	7,571	7,350	3%	-3%
Brentwood	45,228	53,917	60,664	19%	13%**
Brightwaters village	3,265	3,248	3,103	-1%	-4%
Central Islip	26,042	31,950	34,450	23%	8%
Islip	18,924	20,575	18,689	9%	-9%**
North Bay Shore	12,799	14,992	18,944	17%	26%*
West Bay Shore	4,907	4,775	4,648	-3%	-3%
West Islip	28,419	28,907	28,335	2%	-2%
Town of Islip portion total	168,214	189,787	202,520	13%	7%
Town of Smithtown portion:					
Commack (SM part)	23,914	23,995	23,587	0%	-2%
Kings Park	15,700	16,146	17,282	3%	7%
Town of Smithtown portion total	39,614	40,141	40,869	1%	2%
STUDY AREA TOTAL	292,768	314,517	328,072	7%	4%

^{*}Place had a slightly larger land area in 2010 compared to 2000.

Source: U. S. Census Bureau (2010 Census), Suffolk County Division of Planning and Environment

^{**} Place had a slightly smaller land area in 2010 compared to 2000.

Between 1990 and 2010, the population of the study area increased by 35,000 residents or 12%. This population growth was similar to that of Suffolk County as a whole, which increased by 13% in the same period. However, most of the population increase in the study area occurred in the Town of Islip. The greatest population increase in the study area has occurred in Brentwood, which increased by 15,000 persons or 34% between 1990 and 2010. North Bay Shore increased by 6,000 residents (48%) and Central Islip increased in population by 8,000 or 32% in the same period. Bay Shore and Kings Park also had increases in population. Most other communities in the study area had relatively little change in population between 1990 and 2010.

The core of the study area currently has a relatively small population. The core area contained approximately 6,400 residents in 2010, the majority of them living in the Brentwood portion of the study area in the Town of Islip. Approximately 10% of the population in the core study area was institutionalized in group quarters at Pilgrim State Hospital, also in Brentwood within the Town of Islip. See *Table 10*.

Table 10. Resident Population in the Core Study Area, 2010

Town	Household Population	Group Quarters Population	Total Population
Town of Babylon portion	0	0	0
Town of Huntington portion	184	12	196
Town of Islip portion	5,544	672	6,216
Town of Smithtown portion	9	0	9
STUDY AREA TOTAL	5,737	684	6,421

Source: U. S. Census Bureau (2010 Census), Suffolk County Division of Planning and Environment

Within the study area, the group quarters population at Pilgrim State Hospital was 656 persons in 2010. Between 1990 and 2000, the population of Pilgrim State Hospital decreased by 73% and between 2000 and 2010 the population at Pilgrim State Hospital decreased by another 39%.

Projected Population

Population projections have been calculated for the ten towns of Suffolk County. These projections estimate future growth based on past and recent trends in new housing construction, available land, number of new households, and changing household size. The projections take into account the possibility of future major redevelopment projects, re-zonings for high density housing, as well as open space acquisitions and re-zonings for lower densities. Population is projected to rise modestly in each of the four towns that contain the study area. The largest increase in projected in the Town of Islip, which is projected to add 28,000 residents or 8% to its population between 2010 and 2030. Islip usually has higher levels of residential building permits than the other towns and contains some significant proposed redevelopment projects. *Table* 11 shows the population projections by town.

Table 11. Projected Population of Study Area Towns, 2010-2030

Town	2010	2020	2030
Town of Babylon	213,603	218,600	226,900
Town of Huntington	203,264	208,100	216,300
Town of Islip	335,543	346,100	363,900
Town of Smithtown	117,801	121,100	126,500
Four Town Total	870,211	893,900	933,600

In total, the four towns that include the study area are projected to increase in population by 63,000 persons, or 7% between 2010 and 2030. This growth rate is similar if slightly smaller than the growth rate for the County as a whole, which is projected to increase in population by 10% between 2010 and 2030.

Environmental Justice Populations

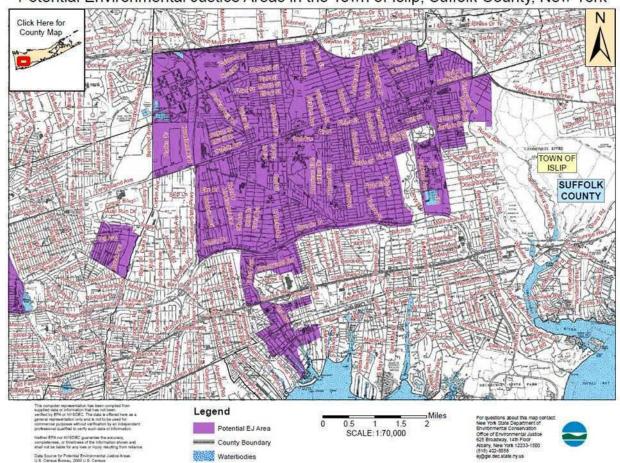
Title VI of the Civil Rights Act of 1964 specifies that no person in the United States shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, issued 1998, states that each federal agency shall make achieving environmental justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

In New York State, "Potential" EJ Areas have been identified by the New York State Department of Environmental Conservation (NYSDEC). (See http://www.dec.ny.gov/public/899.html) As established in NYSDEC Commissioner Policy 29 on Environmental Justice and Permitting (CP-29), Potential EJ Areas are 2000 U.S. Census block groups of 250 to 500 households each that, in the 2000 Census, had populations that met or exceeded at least one of the following statistical thresholds:

- At least 51.1% of the population in an urban area reported themselves to be members of minority groups; or
- At least 33.8% of the population in a rural area reported themselves to be members of minority groups: or
- At least 23.59% of the population in an urban or rural area had household incomes below the federal poverty level.

In Suffolk County within the study area, there are several significant economic justice areas. All of the

neighborhoods of Brentwood and North Bay Shore are economic justice areas. Almost all of Central Islip within the study area is an economic justice area. Additionally, much of Bay Shore and parts of Deer Park and Islip hamlet are economic justice areas.



Potential Environmental Justice Areas in the Town of Islip, Suffolk County, New York

Non-Residential Development

Industrial

There is significant light industrial development in the study area, including the entire Hauppauge Industrial Park. This large industrial area in the Town of Smithtown contains 13,100,000 square feet of industrial space and is an employment center for more than 30,000 workers, which represents about 6% of the total employment in the County. Light industrial buildings began construction in Hauppauge in the 1960s. Significant and rapid expansion of the industrial park took place in the 1970s and 1980s. By the 1990s, the industrial park was almost completely developed. In 2013, Suffolk County completed a \$75.7 million extension of the sewer lines and expansion of the sewage treatment plant serving the Hauppauge Industrial

Park. This sewer expansion will allow for businesses in the park to expand their facilities. Furthermore, the Town of Smithtown is exploring adding an overlay district for the Hauppauge Industrial Park to its town code. This change would increase building height maximums and allow more parking, allowing for building expansions in the park.

In the Heartland Industrial Park in Brentwood (Town of Islip), multiple new industrial buildings have been constructed since 1990, and new industrial construction continues in that area. The Heartland Industrial Park was opened in the late 1980s and by 1990 already contained more than 1.2 million square feet of industrial space. By 2004, space in the industrial park totaled 2.8 million square feet and by 2010 the total was 3.4 million square feet. There are presently 84 acres of land available for industrial development in the Heartland Industrial Park. This land could yield an additional 1.3 million square feet of industrial space in the study area.

The industrial development in Deer Park (Town of Babylon) within the study area is slightly older. Much of that industrial space was constructed in the 1960s and 1970s. There is no vacant industrial land in the Deer Park portion of the study area. Other significant industrial development exists in the study area in Brentwood, North Bay Shore, and Kings Park.

Within the study area, detailed square footage figures of industrial development were calculated. These calculations were generated by GIS, based on an analysis of building footprint square footage figures on land parcels coded as industrial land use. These building footprints are based on information from 2006, and as such may not match up exactly with more recent data on land use and commercial development.

These calculations indicate that the study area contains significant industrial square footage totaling 35,566,000 square feet of development. The total square footage of industrial buildings in all of Suffolk County is approximately 100,000,000 square feet, so the study area contains approximately 35% of all industrial square footage in Suffolk County. *Table 12* details the square footage of industrial buildings in the study area, broken down by town.

Table 12. Industrial Development in the Sagtikos Regional Development Area

Town	Industrial Square Footage
Town of Babylon portion	6,481,000
Town of Huntington portion	149,000
Town of Islip portion	15,090,000
Town of Smithtown portion	13,846,000
STUDY AREA TOTAL	35,566,000

Source: Suffolk County Division of Planning and Environment

The Town of Islip portion of the study area contains more than 15 million square feet of industrial space, concentrated in Hauppauge, Brentwood, and North Bay Shore. The Town of Smithtown is a close second, with nearly 14 million square feet of industrial space, nearly all of it in Hauppauge. The town of Babylon portion of the study area has 6 million square feet of industrial space in Deer Park, and the town of Huntington portion of the study area has a negligible amount of industrial space.

An analysis of industrial development in the core of the study area using aerial photos from 2010 was performed. *Table 13* shows land used for industry and the square footage of industrial buildings in the core of the Sagtikos Regional Development Area as of 2010.

Table 13. Industrial Development in the Core of the Sagtikos Regional Development Area

Town	Industrial Properties	Industrial Square Footage
Town of Babylon portion	51	1,787,400
Town of Huntington portion	0	0
Town of Islip portion	74	4,561,000
Town of Smithtown portion	1	5,600
STUDY AREA TOTAL	126	6,354,000

Source: Suffolk County Division of Planning and Environment

The core study area contains 126 industrial properties, with 6.35 million square feet of industrial buildings, primarily in the Town of Islip portion of the study area in the Heartland Industrial Park.

The market for industrial space in the Nassau-Suffolk region remains healthy. According to commercial real estate advisory firm Newmark Grubb Knight Frank, the industrial vacancy rate in the first quarter of 2013 was 4.6% in Suffolk County, among the lowest in the United States. The United States as a whole had an industrial vacancy rate above 8% in the same period.

Office Buildings

The Sagtikos Regional Development Area contains numerous major office buildings (defined as private office buildings greater than 15,000 square feet). The total square footage of the 70 major office buildings in the study area is 3,316,000 square feet. This figure represents 13% of all the office space in Suffolk County. A full 80% of the office space in the study area is located in the Town of Smithtown. The Smithtown portion of the study area has 2.7 million square feet of office space, followed by 404,000 square feet in the Town of Islip. See *Table 14*.

Table 14. Major Office Buildings* in the Sagtikos Regional Development Area

Town	Major Office Buildings	Square Footage
Town of Babylon portion	2	40,000
Town of Huntington portion	8	217,000
Town of Islip portion	15	404,000
Town of Smithtown portion	45	2,655,000
STUDY AREA TOTAL	70	3,316,000

^{*}Defined as 15,000 square feet or larger.

The majority of the office space in the study area is located in Hauppauge in the town of Smithtown. In the portion of Hauppauge that lies in the study area, there are 2.5 million square feet of office space.

The core of the Sagtikos Regional Development Area contains just two office buildings greater than 15,000 square feet: a 17,000 square foot office building on East Industry Court in Deer Park built in 1980, and a 50,000 square foot building used by Sloan-Kettering built in Commack in 2002.

The entire study area lies within the central Suffolk County office market, separate from the western Suffolk County market which includes the Route 110 Corridor. The office market statistics compiled by the commercial real estate services firm CBRE indicate strength in the local office market. The overall vacancy rate in Suffolk County as a whole was 14.7% in the first quarter of 2013, an improvement over a 16.3% rate a year earlier. The central Suffolk office market has improved even more significantly. The office vacancy rate was 12.8% in the first quarter of 2013, lower than the Suffolk County rate and a marked improvement over the 15.1% vacancy rate of the first quarter of 2012, and an even more significant improvement since 2009 and 2010. Office vacancy rates in the 12-14% range represent a balanced market. See *Table* 15 for more detail.

Table 15. Office Market Statistics, Suffolk County and Central Suffolk Markets

	Vaca	Vacancy Rate		Rate Per Sq. Ft.
Time Period	Central	Suffolk County	Central	Suffolk County
	Suffolk County	Total	Suffolk County	Total
1st Q 2008	17.1%	13.6%	\$21.93	\$24.51
1st Q 2009	22.3%	18.1%	\$21.17	\$24.59
1st Q 2010	20.4%	19.7%	\$21.36	\$23.86
1st Q 2011	18.4%	20.1%	\$20.81	\$23.89
1st Q 2012	15.1%	16.3%	\$21.10	\$24.50
1 st Q 2013	12.8%	14.7%	\$20.68	\$24.17

Source: CB Richard Ellis

In the five years between the first quarter of 2008 and the first quarter of 2013, office rental rates declined in Suffolk County as a whole by 1% but by 6% in the Central Suffolk sub-market. However, in that period, vacancy rates improved in both the Central Suffolk area and in Suffolk County as a whole. These figures indicate that the office market in the Central Suffolk area is improving, especially relative to the Long Island region as a whole.

In the first quarter of 2013, the office rental rate in Suffolk County was \$24.17 per square foot, 1% lower than a year earlier. The Central Suffolk rental rate of \$20.68 is 14% lower than the Suffolk average, and declined by 2% in the past year.

Retail

Suffolk County Planning tabulated the square footage of shopping centers in the study area. Shopping centers include retail buildings with four or more stores, free standing supermarkets, or stores greater than 100,000 square feet in size. The Sagtikos Regional Development Area contains 8,783,500 square feet of shopping center space in 142 shopping centers and large retailers. The square footage of shopping centers in the study area represents 22% of all the shopping center square footage in Suffolk County.

The portion of the study area in the Town of Islip has the majority of the area's shopping center space, 4.459 million square feet in 81 centers, including the Westfield South Shore Mall in Bay Shore. The Smithtown Town portion of the study area contains 14 shopping centers having a combined 1.69 million square feet of space. The Town of Babylon portion of the study area contains 1.67 million square feet of shopping center space in 26 centers, including the 803,000 square foot Tanger Outlets at the Arches. There are 21 shopping centers within the study area in the Town of Huntington, with a combined 966,500 square feet of space. See *Table* 16.

Table 16. Shopping Centers in the Sagtikos Regional Development Area

Town	Shopping Centers	Square Footage	Stores
Town of Babylon portion	26	1,670,500	326
Town of Huntington portion	21	966,500	201
Town of Islip portion	81	4,459,000	786
Town of Smithtown portion	14	1,687,500	115
STUDY AREA TOTAL	142	8,783,500	1,428

There are 22 shopping centers or stand-alone retailers in the study area that have more than 100,000 square feet. Three communities in the study area contain most of the shopping center square footage. Within the study area, the largest amount of shopping center space is located in Commack, with 1.97 million square feet of space. Bay Shore has the next largest amount of shopping center space, 1.86 million, followed by Deer Park with 1.39 million square feet. Several other communities in the study contain more than 400,000 square feet of shopping center space: Brentwood, Central Islip, West Bay Shore, Elwood, and West Islip.

The study area includes portions of 12 downtown centers, totaling 603,000 square feet of ground floor space. Seven of these downtown areas are split by the study area boundary, where approximately half the downtown lies within the study area. The majority of the downtown areas located in the study area are in the Town of Islip, including Bay Shore (partly in the study area), Brentwood, Brightwaters, and Islip (partly in the study area).

The core of the Sagtikos Regional Development Area contains 2,151,000 square feet of shopping center space in 17 shopping centers and large retailers. This core area does not include any downtown centers. The Town of Babylon portion of the study area (in Deer Park) has the majority of the core's shopping center space, 1.218 million square feet in 5 centers, including the Tanger Outlets at the Arches. The Town of Smithtown (Commack) portion of the study area core contains 888,500 square feet of shopping center space in 8 centers. Also within the study area core, the Islip town portion (in Brentwood) contains four small shopping centers having a combined 44,500 square feet of space. There are no shopping centers within the core of the study area in the Town of Huntington. The study area core, the Islip town portion (in Brentwood) contains four small shopping centers having a combined 44,500 square feet of space. There are no shopping centers within the core of the study area in the Town of Huntington.

A full 92% of the shopping center space in the core of the study area was built after 1990, and 77% of the shopping center space in the core was built between 2000 and 2009. A full 37% of the core area's shopping center space is comprised of the Tanger Outlets center which was built in 2008. Vacancy rates in shopping centers vary within the study area and vary month to month; as a result this data is not included in this report because it becomes outdated quickly.

Hotels

There are 10 hotels within the Sagtikos Regional Development Area. Together these 10 hotels have 986 rooms, representing 15% of all available lodging rooms in western Suffolk County. The vast majority of the study area's hotels lie in the towns of Islip and Smithtown. *Table 17* details the number of hotels and rooms in the study area.

Table 17. Hotels in the Sagtikos Regional Development Area.

Town	Hotels	Rooms
Town of Babylon portion	1	46
Town of Huntington portion	0	0
Town of Islip portion	5	396
Town of Smithtown portion	4	544
STUDY AREA TOTAL	10	986

Source: Suffolk County Division of Planning and Environment

The largest hotel in the study area is the 209 room Sheraton in Hauppauge (Town of Smithtown), which opened in 1980. The next largest hotel is the 143 room Hampton Inn in Commack (Town of Smithtown), which opened in 1988 and is located on Commack Road north of the L. I. E. North Service Road. The 133 room Holiday Inn Express in Hauppauge (Town of Islip) opened in 2001, and the 110 room Wingate Inn on Crooked Hill Road in Brentwood (Town of Islip) opened in 2003. Together, these two hotels contain 253 rooms.

Other Commercial Development

Significant other commercial development exists within the study area. Examples of this type of development in the study area include gasoline stations, vehicle repair shops, public storage facilities, and freestanding commercial buildings such as retail stores, restaurants, and other various commercial buildings. Strip commercial development on roads such as Montauk Highway, Sunrise Highway, Suffolk Avenue, Deer Park Avenue, and Jericho Turnpike contribute to this additional commercial square footage. These various commercial uses total five million square feet in the study area, most of it in the Town of Islip portion of the study area. See *Table 18*.

Table 18. Other Commercial Development in the Sagtikos Regional Development Area

Town	Square Footage
Town of Babylon portion	170,000
Town of Huntington portion	785,000
Town of Islip portion	3,837,000
Town of Smithtown portion	228,000
STUDY AREA TOTAL	5,020,000

Pilgrim State Hospital

At the center of the Sagtikos Regional Development Area lies Pilgrim State Hospital. Pilgrim State opened in 1931 on 825 acres and by 1954 the facility housed more than 13,000 psychiatric patients in what was at the time the largest hospital of any type in the world. The hospital property had its own police and fire department, courts, post office, power plant, cemetery, water tower, and houses for doctors, psychiatrists, and asylum administrators. A series of underground tunnels were used for routing steam pipes and other vital utilities. A rail spur off the Long Island Railroad main line was constructed to the property with its own passenger station at Pilgrim. Service to this station ended in 1978.

With the arrival of medical alternatives to institutionalizing patients, Pilgrim's population steadily declined and many buildings were closed in the 1970s and 1980s. The farming section of the hospital grounds was sold off and became the Western Campus of Suffolk Community College in 1974. Within the Pilgrim State property, off Commack Road, several buildings were briefly used as a correctional facility in the 1980s. After much community protest, the facility was closed. In the early 1990s, with declining patient populations in Long Island's State hospitals, the New York State Office of Mental Health began to reorganize the Long Island hospitals. In 1996 the Kings Park and Central Islip state hospitals were formally closed and the remaining patients from those facilities were transferred to Pilgrim, the last of the State asylums still operating on Long Island.

In 2002, a 452 acre portion of the Pilgrim State Hospital property was sold to a developer. Since that time, many buildings on the site have been demolished and cleared. The core of the Pilgrim State Hospital campus remains intact, housing about 650 patients. The hospital provides a continuum of inpatient and outpatient psychiatric services.

Another psychiatric hospital, Edgewood State Hospital, was located off Commack Road north of Long Island Avenue, within the Sagtikos Regional Development Area. This facility was built in the early 1940s. In order to accommodate the hospital, Commack Road was moved to the west at this time. Edgewood State Hospital closed in 1971 and was demolished in 1989. The property became a New York State preserve.

Other Institutional Development

Aside from Pilgrim State Hospital, significant other institutional development exists in the study area. Much of the institutional development is comprised of local school district buildings, along with Suffolk Community College, which contains approximately 650,000 square feet of space. Other institutional uses include buildings associated with religious uses and various local and state government uses.

Recently Completed Major Developments

It should be noted that the study area has experienced significant private development since 2000. The Heartland Industrial Park, in Brentwood within the Town of Islip, is almost completely built out. An 87 acre parcel in the northwest part of the Heartland Industrial Park was opened for development in 2005 and since then, more than 500,000 square feet of light industrial space has been added to the industrial park.

In Deer Park within the Town of Babylon, the Tanger Outlets at the Arches opened in 2008 and expanded in 2011. This 803,000 development on 81 acres replaced the AIL industrial facility on Grand Boulevard east of Commack Road. The site includes the outlet lifestyle center, a 14-screen movie theater and a BJ's warehouse club store. Also in Deer Park, on the west side of Commack Road north of Long Island Avenue, a 97,000 square foot shopping center was built on 10 acres in 2009.

Crooked Hill Commons is a 377,000 square foot retail development east of Crooked Hill Road in the Commack portion of the Town of Smithtown. Also known as PJ Ventures II, this 40 acre site was developed in 2006 and includes Wal-Mart, Home Depot, and Kohl's department store. In 2013, a 132,000 square foot Lowe's store is being constructed at the site of the former Commack Multiplex Cinemas between CR 4 (Commack Road) and CR 13 (Crooked Hill Road), north of the Long Island Expressway in Commack in the Town of Smithtown.

Economic Impact of Existing Development

An economic impact analysis of the Sagtikos Regional Development Area was performed based on the existing square footage of commercial and industrial development in the study area. In total, commercial and industrial activity in the study area generates an estimated \$15,458,711,080 of revenue within the study area, the equivalent of an estimated 26% of all economic activity (GDP) in Suffolk County (\$62 billion in 2012). These findings are detailed and explained in the following paragraphs.

A customized *Regional Input Output Model (RIMS II)* for the Long Island region was employed to determine the multiplier effect of all economic activity in the study area. The multiplier effect refers to the impact that expenditures have on a regional economy, whereby initial expenditures lead to an increase in regional income over and above the original expenditures. The multiplier effect is the result of the repeated respending of incomes, minus "leakages" to economic actors outside the region. In other words, initial expenditures may cause a change in aggregate output (and hence the aggregate income that it generates) that is a multiple of the initial expenditure. Available vacancy rate data and estimates of revenues per square foot for various categories of commercial and industrial development were also utilized to determine the economic impact of the study area on the local economy.

The economic impact analysis utilizes three commonly used regional economic multipliers: output, earnings, and employment. The output multiplier measures the total value of economic activity by all sectors of the regional economy necessary to satisfy an increase in final demand caused by an injection of expenditures. The earnings multiplier translates the effects of changes in final demand into changes in household income (minus transfer payments, dividends, interest and rent). The employment multiplier translates initial output changes into regional employment changes. Unless otherwise stated, all multiplier effects reported here are for the Nassau-Suffolk region as a whole.

Within the study area, there are currently 35,566,000 square feet of industrial space; 3,316,000 square feet of office space; 5,020,000 square feet of "other" commercial space; 986 hotel rooms; and 8,783,500 square feet of shopping center space. These figures are utilized in calculating the economic impact of this development. This analysis also applies a number of assumptions about the study's land use data, which are described in the following text.

Economic Impact of Industrial Development

In the study area, there are currently 35,566,000 square feet of industrial space. When the 4.6% industrial vacancy rate for western Suffolk in the 1st quarter of 2013 is applied to the total industrial square footage in the study area, the amount of occupied industrial square footage in the study area is calculated to be 33,929,964. Total revenue per square foot of industrial space in the study area is estimated to be \$230. (This number is derived by dividing the total revenues produced by industrial space in Suffolk County by the total industrial square footage in the county. Total revenues are derived from the U.S. Census Bureau's annual County Business Patterns report which provides the total payroll generated by manufacturers, and data from available economic sources which indicate that industrial payrolls comprise 12.1% of total industrial revenues.)

When the figure of \$230 revenue per square foot is applied to the 33,929,964 square feet of occupied industrial space in the study area, total industrial revenue for the study area is calculated to be \$7,803,891,720. (According to U.S. Census figures for Suffolk County, this figure accounted for approximately 40 percent of Suffolk's \$19.1 billion in total manufactures shipments in 2010). This revenue estimate is then applied to the customized RIMS II multiplier model, yielding the following results: additional total economic output of \$21,156,350,453; additional total earnings of \$5,024,145,489; and additional total jobs of 124,007. For a detailed breakdown by industry, see *Table* 19.

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Table 19. Economic Impact of Industrial Space, Sagtikos Regional Development Area

	Output Multipliers *	Earnings Multipliers *	Employment Multipliers**	Increase in Output	Increase in Earnings	Increase in Jobs
Industry						
Agriculture, Forestry, Fishing	0.0034	0.0007	0.0597	\$26,533,232	\$5,462,724	466
Mining	0.0017	0.0005	0.0094	\$13,266,616	\$3,901,946	73
Utilities	0.0228	0.0042	0.0470	\$177,928,731	\$32,776,345	367
Construction	1.0066	0.3568	7.9630	\$7,855,397,405	\$2,784,428,566	62,142
Manufacturing	0.1669	0.0324	0.7403	\$1,302,469,528	\$252,846,092	5,777
Wholesale Trade	0.0758	0.0219	0.3800	\$591,534,992	\$170,905,229	2,965
Retail Trade	0.1276	0.0393	1.6218	\$995,776,583	\$306,692,945	12,656
Transportation & Warehousing	0.0342	0.0110	0.3150	\$266,893,097	\$85,842,809	2,458
Information	0.0485	0.0114	0.1920	\$378,488,748	\$88,964,366	1,498
Finance & Insurance	0.1148	0.0265	0.4212	\$895,886,769	\$206,803,131	3,287
Real Estate; Rental & Leasing	0.1324	0.0077	0.2330	\$1,033,235,264	\$60,089,966	1,818
Professional, Scientific, Technical	0.0874	0.0365	0.7073	\$682,060,136	\$284,842,048	5,520
Management of Companies	0.0266	0.0105	0.1316	\$207,583,520	\$81,940,863	1,027
Administrative & Waste Management	0.0369	0.0138	0.5311	\$287,963,604	\$107,693,706	4,145
Educational Services	0.0112	0.0046	0.1715	\$87,403,587	\$35,897,902	1,338
Health Care & Social Assistance	0.0877	0.0383	0.9580	\$684,401,304	\$298,889,053	7,476
Arts, Entertainment & Recreation	0.0104	0.0038	0.1703	\$81,160,474	\$29,654,789	1,329
Accommodation & Food Services	0.0327	0.0112	0.7224	\$255,187,259	\$87,403,587	5,638
Other Services	0.0396	0.0120	0.4563	\$309,034,112	\$93,646,701	3,561
Households	0.6438	0.0007	0.0596	\$5,024,145,489	\$5,462,724	465
Total	2.7110	0.6438	15.8905	\$21,156,350,453	\$5,024,145,489	124,008

^{*} Shows the impact of each dollar of spending

^{**} Shows the impact of each \$1 million of spending

Economic Impact of Office Space, Hotels, and Other Commercial Development

For office space, a vacancy rate of 12.8% (the central Suffolk vacancy rate for commercial space in the first quarter of 2013) is applied to the 3,316,000 square feet of office space in the study area, yielding a total square footage of occupied office space of 2,891,552.

For the purposes of this study, "other" commercial development include uses such as gasoline stations, vehicle repair shops, public storage facilities, and freestanding commercial buildings such as retail stores, restaurants, and other various commercial buildings. It is estimated that roughly half of the 5,020,000 square feet of developed "other" commercial space, or 2,510,000 square feet, can be assigned to the office use category. The other half would more properly fit under the retail use category analyzed below. When the 12.8% commercial vacancy rate is applied to this number of square feet, the amount of occupied other/ office commercial space is calculated to be 2,188,720 square feet.

There are 986 hotel rooms in the study area. Using an estimate from Long Island Business News concerning hotel occupancy in Suffolk County, it is assumed that 70% of the hotel rooms in the study area are occupied, each hotel charges an average daily room rate of \$150 per night, and each room therefore yields \$52,800 in annual revenue. In addition, it is assumed that office and other commercial space returns \$150 of revenue per square foot. When all of these assumptions are applied to the occupied commercial space in the study area, it is estimated that \$798,483,360 of total revenue is generated annually. When that amount of revenue is applied to the RIMS II multiplier model the following results are calculated: additional total economic output of \$2,432,659,405; additional total earnings of \$1,625,153,183; and additional total jobs of 36,610. *Table 20* contains additional details by industry.

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Table 20. Economic Impact of Office Space, Hotels, and Other Commercial Development, Sagtikos Regional Development Area

Industry	Output Multipliers *	Earnings Multipliers *	Employment Multipliers **	Increase in Output	Increase in Earnings	Increase in Jobs
Agriculture, Forestry, Fishing	0.0031	0.0014	0.1000	\$2,475,298	\$1,117,877	80
Mining	0.0224	0.0103	0.3000	\$17,886,027	\$8,224,379	240
Utilities	0.0534	0.0323	0.9000	\$42,639,011	\$25,791,013	719
Construction	0.0224	0.0150	0.5000	\$17,886,027	\$11,977,250	399
Manufacturing	0.1175	0.0321	0.8900	\$93,821,795	\$25,631,316	711
Wholesale Trade	0.0416	0.0202	0.6000	\$33,216,908	\$16,129,364	479
Retail Trade	0.0896	0.0445	1.4000	\$71,544,109	\$35,532,510	1,118
Transportation & Ware- housing	0.1071	0.0323	1.1000	\$85,517,568	\$25,791,013	878
Information	0.1021	0.6677	11.6000	\$81,525,151	\$533,147,339	9,262
Finance & Insurance	0.2055	0.0276	3.1000	\$164,088,330	\$22,038,141	2,475
Real Estate; Rental & Leasing	0.2011	0.0388	0.8000	\$160,575,004	\$30,981,154	639
Professional, Scientific, Technical	1.0899	0.5567	8.6000	\$870,267,014	\$444,515,687	6,867
Management of Companies	0.1003	0.4470	9.2000	\$80,087,881	\$356,922,062	7,346
Administrative & Waste Management	0.0466	0.0194	0.9000	\$37,209,325	\$15,490,577	719
Educational Services	0.0366	0.0099	0.5000	\$29,224,491	\$7,904,985	399
Health Care & Social Assistance	0.0542	0.0364	2.0000	\$43,277,798	\$29,064,794	1,597
Arts, Entertainment & Recreation	0.0242	0.0094	0.2000	\$19,323,297	\$7,505,744	160
Accommodation & Food Services	0.0596	0.0255	2.4000	\$47,589,608	\$20,361,326	1,916
Other Services	0.0256	0.0081	0.7000	\$20,441,174	\$6,467,715	559
Households	0.6438	0.0007	0.0596	\$514,063,587	\$558,938	48
Total	3.0466	2.0353	45.8496	\$2,432,659,405	\$1,625,153,183	36,610

Economic Impact of Retail Development

There is currently 8,783,500 square feet of shopping center space in the study area. According to a Suffolk County Planning Department study from 2010, the vacancy rate for shopping centers within the core of the study area was 18%. When this vacancy rate is applied to the study area's shopping center square footage,

^{*} Shows the impact of each dollar of spending

^{**} Shows the impact of each \$1 million of spending

occupied shopping center space is calculated to be 7,202,470 square feet. It is estimated that developed retail space in shopping centers generates \$800 per square foot of revenues annually.

As mentioned previously, half of the 5,020,000 square feet of developed "other" commercial space, or 2,510,000 square feet, is assigned to the retail category. Applying the 12.8% vacancy rate for commercial space, the total occupied "other" commercial space used for retail is estimated to be 2,188,720 square feet. It is estimated that this kind of commercial retail space, not located in shopping centers, yields revenue of \$500 per square foot annually.

When these assumptions are applied together, it is estimated that \$6,856,336,000 in total revenue is generated annually from retail space in the study area. When that amount of revenue is applied to the RIMS II multiplier model the following results are calculated: total additional economic output of \$21,668,078,661; total additional earnings of \$4,021,241,064; and total additional jobs of 334,517. *Table* 21 contains additional details by industry.

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Table 21. Economic Impact of Shopping Center and Other Retail Space, Sagtikos Regional Development Area

Industry	Output Multipliers *	Earnings Multi- pliers *	Employment Multipliers **	Increase in Output	Increase in Earn- ings	Increase in Jobs
Agriculture, Forestry, Fishing	0.0033	0.0015	0.0900	\$22,625,909	\$10,284,504	617
Mining	0.0233	0.0103	0.0400	\$159,752,629	\$70,620,261	274
Utilities	0.0899	0.0455	1.5000	\$616,384,606	\$311,963,288	10,285
Construction	0.0381	0.0250	0.8000	\$261,226,402	\$171,408,400	5,485
Manufacturing	0.1174	0.0421	1.0000	\$804,933,846	\$288,651,746	6,856
Wholesale Trade	0.0456	0.0302	0.6000	\$312,648,922	\$207,061,347	4,114
Retail Trade	1.0087	0.0555	30.6000	\$6,915,986,123	\$380,526,648	209,804
Transportation & Warehous- ing	0.1071	0.0323	1.1000	\$734,313,586	\$221,459,653	7,542
Information	0.1622	0.0389	1.5000	\$1,112,097,699	\$266,711,470	10,285
Finance & Insurance	0.2356	0.0376	1.1000	\$1,615,352,762	\$257,798,234	7,542
Real Estate; Rental & Leas- ing	0.3111	0.0408	1.2000	\$2,133,006,130	\$279,738,509	8,228
Professional, Scientific, Technical	0.0755	0.0480	0.7000	\$517,653,368	\$329,104,128	4,799
Management of Companies	0.0744	0.0480	1.4000	\$510,111,398	\$329,104,128	9,599
Administrative & Waste Management	0.0356	0.0194	0.9000	\$244,085,562	\$133,012,918	6,171
Educational Services	0.0344	0.029	0.5000	\$235,857,958	\$198,833,744	3,428
Health Care & Social Assistance	0.0537	0.0355	3.0000	\$368,185,243	\$243,399,928	20,569
Arts, Entertainment & Recreation	0.0125	0.0043	0.2000	\$85,704,200	\$29,482,245	1,371
Accommodation & Food Services	0.0425	0.0229	1.6000	\$291,394,280	\$157,010,094	10,970
Other Services	0.0456	0.019	0.9000	\$312,648,922	\$130,270,384	6,171
Households	0.6438	0.0007	0.0596	\$4,414,109,117	\$4,799,435	409
Total	3.1603	0.5865	48.7896	\$21,668,078,661	\$4,021,241,064	334,518

Total Economic Impact of Study Area

In total, existing commercial and industrial activity in the study area generates an estimated \$15,458,711,080 of revenue within the study area, the equivalent of an estimated 26% of all economic activity (GDP) in Suffolk County (\$62 billion in 2012). When the multiplier model is applied, the increase to

^{*} Shows the impact of each dollar of spending

^{**} Shows the impact of each \$1 million of spending

economic output from the study area totals an additional estimated \$45,257,088,518, the equivalent of an estimated 36.2% of Nassau-Suffolk's total economic activity (\$125 billion in 2012). The total additional increase to earnings totals \$10,670,539,736 and additional total jobs generated come to 495,136. *Table* 22 contains additional details.

Table 22. Total Economic Impact of the Sagtikos Regional Development Area

Development Type	Revenues	Output	Earnings	Jobs
Industrial	7,803,891,720	\$21,156,350,453	\$5,024,145,489	124,008
Office/Commercial	\$798,483,360	\$2,432,659,405	\$1,625,153,183	36,610
Retail	\$6,856,336,000	\$21,668,078,661	\$4,021,241,064	334,518
Total	\$15,458,711,080	\$45,257,088,518	\$10,670,539,736	495,136

Source: Suffolk County Division of Planning and Environment

Impact on Sales Tax

Many of the commercial activities in the study area are retail activities that generate sales tax revenue for Suffolk County and New York State. Assuming the current 8.625% sales tax rate in Suffolk County and sales generated revenue of \$800 per square foot (retail) and \$500 per square foot (other commercial), the total annual sales tax generated by the study area is estimated to be \$591,358,980. With the Suffolk County portion of the sales tax at 4.625%, the estimated Suffolk County portion of the annual sales tax generated by the study area is \$317,791,174, roughly 25% of sales tax in the County. Table 23 describes the calculation.

Table 23. Estimated Sales Taxes Generated, Sagtikos Regional Development Area

Sagtikos Study Area	Suffolk County Total	Total Annual Sales Tax	Suffolk County Portion	Total Annual Sales Generated
Annual Sales	Sales Tax Rate	Generated	Sales Tax Rate	Suffolk Portion Tax Generated
\$6,856,336,000	8.625%	\$591,358,980	4.625%	\$317,791,174

Source: Suffolk County Division of Planning and Environment

Impact on Property Tax

Assuming 50 million square feet of commercial development in the study area, total property taxes of approximately \$1.50 per square foot (calculated from the Suffolk County 2012 Property Tax Warrant filed with the Suffolk County Treasurer's Office), and the approximate percentage breakdown for each taxing jurisdiction derived from the property tax rolls (excluding village property taxes), it is estimated that total property taxes generated by the study area's commercial development is approximately \$75.8 million, distributed by jurisdiction as shown in the *Table 24*.

Jurisdiction	Percent of 2012 Tax Warrant	Estimated Property Tax Generated*
School Districts	60.1	\$45,571,806
Town (includes lighting & garbage improvement area, excludes commercial garbage district)	16.2	\$12,294,813
Fire Districts	3.9	\$2,931,969
Other Town Special Districts (includes commercial garbage district)	0.4	\$287,751
County General Fund (excludes erroneous assessments)	1.1	\$805,139
County College (excludes erroneous assessments)	0.1	\$72,614
County Police District (excludes erroneous assessments)	11.2	\$8,515,249
County District Court (excludes erroneous assessments)	0.3	\$222,368
County Other (includes sewer districts)	5.5	\$4,132,485
Erroneous Assessments Total	1.3	\$961,522
Total Tax Warrant	100.0	\$75,795,714

Table 24. Estimated Property Taxes Paid by Commercial Property, Sagtikos Regional Development Area

Transportation

The Sagtikos Regional Development Area is currently served by several major and secondary highways, Suffolk County Transit buses, and the Long Island Railroad.

Existing Highways and Collector Roads

New York State Highways

Segments of several major limited access State highways lie within the study area. Other significant State roadways are also located within the study area. These are all described below.

I-495, the Long Island Expressway, is an eastbound-westbound interstate roadway that bisects the entire study area. The route extends for 71 miles from the western portal of the Queens-Midtown Tunnel in New York City to County Route 58 (CR 58) in Riverhead, Suffolk County. The New York State Department of Transportation owns and maintains the Long Island Expressway.

The Sagtikos State Parkway is a northbound-southbound limited-access roadway that runs through the entire study area. It is 5.14 miles long and begins at an interchange with the Southern State Parkway and the Heckscher State Parkway (exit 40 on the Southern State

^{* \$1.50} total property tax per square foot estimated from 2012 Suffolk tax warrant. Source: Suffolk County Division of Planning and Environment

Parkway and exit S4 on the Heckscher State Parkway) in the hamlet of West Islip. The parkway goes north until a large cloverleaf interchange at the Northern State Parkway (exit SM1), where the Sagtikos State Parkway ends and becomes the Sunken Meadow State Parkway. The parkway comprises the southern half of New York State Route 908K, an unsigned reference route, with the Sunken Meadow State Parkway forming the northern portion. Like on most parkways, commercial vehicles are restricted on the Sagtikos State Parkway. The New York State Parks Recreation & Historic Preservation owns and the New York State Department of Transportation maintains the Heckscher State Parkway.

The Northern State Parkway is an eastbound-westbound limited-access roadway that bisects the northern portion of the study area. The entire roadway is 28.88 miles long from the western terminus at the Queens-Nassau County line and the eastern terminus at New York State Route (NYS RT) 347 and NYS RT 454 in Hauppauge. New York State law prohibits commercial vehicles from using the Northern State Parkway. The New York State Parks Recreation & Historic Preservation owns and the New York State Department of Transportation maintains the Northern State Parkway.

The Southern State Parkway is an eastbound-westbound limited-access roadway that bisects the entire southern portion of the study area. Within the study area, the Southern State Parkway runs from Deer Park Avenue (Exit 39) to Carleton Avenue (Exit 43) within the towns of Babylon and Islip. The entire Parkway is a 25.53-mile limited-access highway that begins at an interchange with the Belt Parkway and Cross Island Parkway in Elmont, in Nassau County, and travels east to an interchange with the Sagtikos State Parkway in West Islip, Suffolk County, where the Southern State Parkway becomes the Heckscher State Parkway. The Southern State Parkway comprises the western portion of unsigned New York State Route 908M (NY 908M), with the Heckscher Parkway occupying the eastern section. The parkway services communities along the South Shore of Long Island.

The Sunken Meadow State Parkway is a 6.19 mile long north-south parkway located entirely within the Town of Smithtown in Suffolk County. The parkway begins at a cloverleaf interchange with the Northern State Parkway (exits 44–45) and the northern terminus of the Sagtikos State Parkway. The parkway, which continues north, is a northern spur of the Sagtikos Parkway. The northern end of the parkway is located in the hamlet of Kings Park in the Town of Smithtown. From there, the road continues north through Sunken Meadow State Park to a roundabout near the Long Island Sound. The parkway comprises the northern half of New York State Route 908K (NY 908K, an unsigned reference route), with the Sagtikos State Parkway forming the southern portion. As on most parkways, commercial vehicles are prohibited from using the Sunken Meadow, except for the small portion north of NYS RT 25A in Kings Park.

NYS RT 111, Islip Avenue, is a 9.42 mile long north-south state roadway located in the towns of Islip and Smithtown with ordinanced speed limits of 30 and 40 mph. It connects NYS RT 27A, Montauk Highway in East Islip to NYS RT 25A East Main Street in Smithtown. Most of the roadway is a two-lane highway, except for several short four-lane stretches in the vicinity of interchanges along the route.

New York State Route 231 (NYS RT 231) is a north-south state roadway. The route extends 9.05 miles from a partial interchange with NYS RT 27A, Montauk Highway in Babylon to an interchange with the Northern State Parkway in Dix Hills. NYS RT 231 forms the western boundary of the study area. The southernmost two miles of NYS RT 231 is a limited-access highway known as the Babylon-Northport Expressway, with a posted speed limit of 55 mph south of Hunter Avenue and 40 mph to the north; the remainder of NYS RT 231 is known as Deer Park Avenue with a posted speed limits of 40 mph south of the LIE, 50 mph north of the LIE to CR 67, Motor Parkway, and 40 mph from CR 67 north to Northern State Parkway.

New York State Route 27 (NYS RT 27) is an east-west state highway extending 120.58 miles from Interstate 278 (I-278) in the New York City borough of Brooklyn east to Montauk Point State Park. Depending on the segment of roadway, it is known as Sunrise Highway and Montauk Highway. The highway is a limited-access highway from NYS RT 109 in Lindenhurst eastward to North Highway in Hampton Bays with a posted speed limit of 55 mph. East of the interchange with the Heckscher State Parkway in Islip Terrace, NYS RT 27 acts as the primary east-west highway on southern Long Island. Every township on the South Shore is accessible through Sunrise Highway. NYS RT 27 bisects the entire southern portion of the study area.

Montauk Highway is an east-west road located near the south shore of Long Island in Suffolk County. It extends from the Nassau County line in Amityville, where it connects to Merrick Road, to Montauk Point State Park at the very eastern end of Long Island in Montauk. The highway is known by several designations along its routing, primarily New York State Route 27A (NYS RT 27A) from the Nassau-Suffolk county line to Oakdale and NYS RT 27 east of Southampton. The portion of Montauk Highway between Oakdale and Southampton is mostly county-maintained as County Route 80 and County Route 85. Montauk Highway forms the southern boundary of the study area.

New York State Route 454 (NYS RT 454), also known as Veterans Memorial Highway or simply Vets Highway, is an east-west divided highway in western and central Suffolk County. It spans 13.67 miles from NYS RT 25, Jericho Turnpike in Commack to NYS RT 27, Sunrise Highway in Holbrook. The route provides access to the Long Island MacArthur Airport, as well as New York State and Suffolk County government offices. NYS RT 454 serves as the northern terminus for the Northern State Parkway in Hauppauge, where a concurrency with NYS RT 347 begins.

New York State Route 347 (NYS RT 347) is a 14.48 mile long east-west state highway located in Suffolk County. It connects the Northern State Parkway in Hauppauge to NYS RT 25A in Mount Sinai. The route serves as a southern bypass of Smithtown and as a direct link between Nesconset and Port Jefferson. The westernmost 2 miles of NYS RT 347 is concurrent with NYS RT 454 while the portion northeast of NYS RT 25 parallels NYS RT 25A, which follows a more northerly alignment through the Town of Brookhaven than NYS RT 347.

New York State Route 25 is an east-west state highway in downstate New York which extends for just over 105 miles from east midtown Manhattan in New York City to the Cross Sound Ferry terminal at Orient Point on the end of Long Island's North Fork.

Suffolk County Highways

There are numerous County-owned and maintained highways within the study area with varying classifications, lane configurations, and speed limits. These roadways are described below.

CR 4, Commack Road, is located within the Towns of Babylon, Huntington, and Smithtown. It has a Functional Classification of Urban Minor Arterial, except for the segment classified as Urban Collector Roadway between Nichols Road and the Huntington Town line. CR 4 is a northbound and southbound roadway. It has two lanes in each direction between Grand Boulevard and approximately 1,500 feet north of Nichols Road. At that location, it transitions to a two-lane highway up to 500 feet south of the Long Island Expressway South Service Road, where it changes to a five-lane highway with two through lanes in each direction and a two way left turn lane which continues to NYS RT 25. The ordinanced speed limit is 40 mph from NYS RT 25 (Jericho Turnpike) to CR 57 (Bay Shore Road) and 35 mph from CR 57 (Bay Shore Road) south to NY 231 (Deer Park Avenue).

CR 6, *Rabro Drive*, runs eastbound and westbound between Old Willets Path and NYS RT 111 in the Towns of Smithtown and Islip. This roadway has one lane in each direction along with turning lanes and has a Functional Class of Urban Minor Arterial. The ordinanced speed limit is 35 mph.

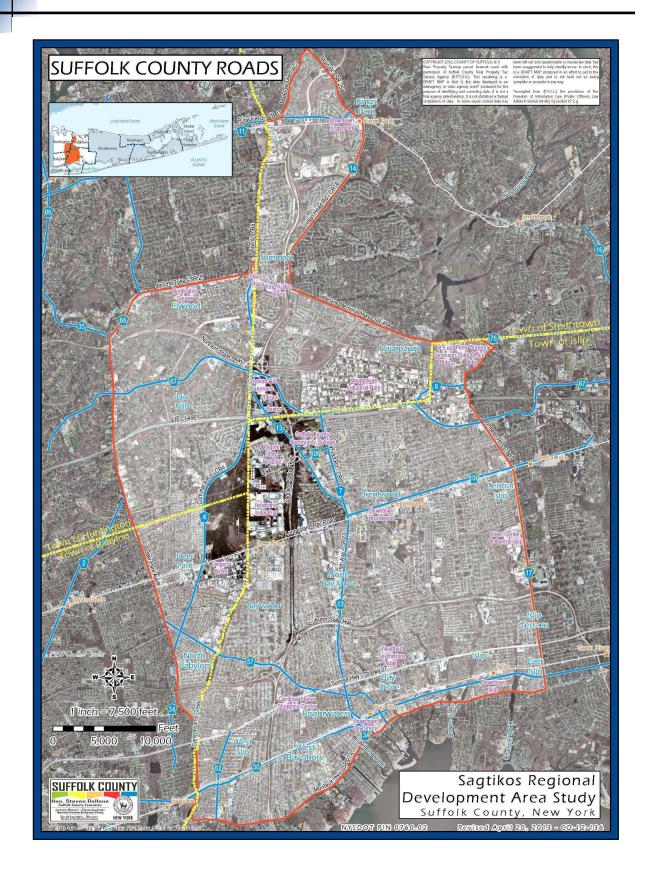
CR 7, Wicks Road, runs from CR 13 (Crooked Hill Road) to CR 67 (Motor Parkway), is located within the Town of Islip, and has a Functional Class of Urban Minor Arterial. CR 7 is a northbound-southbound roadway. There is one lane in each direction between CR 13 (Crooked Hill Road) and CR 106 (Community College Road). Between CR 106 and the Long Island Expressway, the roadway is comprised of two lanes southbound and one lane northbound. It has an ordinanced speed limit of 35 mph from CR 67 south to Quail Drive, 30 mph from Quail Drive to CR 13 (Crooked Hill Road) and has a 20 mph School Speed Zone from Heyward Street south to Polly Drive.

CR 11, Pulaski Road, runs eastbound and westbound through the northern part of the study area between Town Line Road and NYS RT 25A in the Town of Smithtown. This roadway has one lane in each direction along with turning lanes and has a Functional Class of Urban Minor Arterial. Within the study area, its ordinanced speed limit is 40 mph.

CR 13, Fifth Avenue/Crooked Hill Road, runs from Pine Aire Drive to CR 4 (Commack Road) and is located within the Towns of Islip and Smithtown. It has a Functional Classification of Urban Minor Arterial. CR 13 is a northbound and southbound roadway. Between Pine Aire Drive and the Pilgrim State Psychiatric Hospital entrance it has two lanes in each direction with a two way left turn lane. North of the Hospital it is generally one lane in each direction to the Long Island Expressway. The ordinanced speed limit is 40 mph.

CR 13A, Clinton Avenue, runs southbound only from CR 13 (Fifth Avenue) to NYS RT 27A (Montauk Highway) and is located entirely within the Town of Islip, The roadway has a Functional Class of Urban Collector, and is ordinanced at the town speed limit of 30 mph.

CR 14, Indian Head Road from NYS RT 25 (Jericho Turnpike) to NYS RT 25A (Main Street) is located entirely



within the Town of Smithtown and has a Functional Class of Urban Minor Arterial. CR 14 is a northbound and southbound highway. There are two lanes in each direction and a two-way left turn lane. The ordinanced speed limit is 40 mph from NYS RT 25 northward to 400 feet south of Old Indian Head Road and 30 mph for the remainder of the roadway to NYS RT 25A.

CR 17, Carleton Avenue, from NYS RT 27A (Montauk Highway) to NYS RT 111 (Wheeler Road), is located entirely within the Town of Islip and has a Functional Class of Urban Minor Arterial. It is a northbound and southbound highway. CR 17 has two lanes in each direction between NYS RT 27A (Montauk Highway) and Spur Drive North. North of this point it becomes two lanes in each direction to Smith Street where it again reduces to one lane in each direction to NYS RT 111 (Joshua's Path). The ordinanced speed limit of CR 17 is 35 mph from NYS RT 27A northward to Spur Drive North, 40 mph from Spur Drive North to Smith Street, and 30 mph from Smith Street to the northern end of CR 17 at NYS RT 111 (Wheeler Road).

CR 50, Union Boulevard, runs eastbound and westbound between NYS RT 109 (Little East Neck Road) and NYS RT 27A (Montauk Highway). The majority of this highway is one lane in each direction, and expands to include a two way left turn lane in some sections. This highway is located in both the Towns of Babylon and Islip. The ordinanced speed limits are 35 mph from Windsor Avenue, Brightwaters to the eastern terminus at NYS RT 27A in Great River, 30 mph in the Village of Brightwaters and 40 mph from Woodland Drive, West Islip to NYS RT 231 at the Babylon Village line. It is an Urban Minor Arterial east of NYS RT 231, and is an Urban Collector west of NYS RT 231.

CR 57, Bay Shore Road, is an Urban Minor Arterial and is located between NYS RT 231 and CR 50 (Union Boulevard). This roadway has one lane in each direction along with a two-way left turn lane. The ordinanced speed limit is 40 mph.

CR 66, Deer Park Road East, serves as a connecting spur between NYS RT 231 and NYS RT 25. CR 66 begins at a Y-intersection with CR 35 and has a Functional Class of Urban Minor Arterial. Deer Park Road East is a northbound and southbound highway with two lanes in each direction and has an ordinanced speed limit of 40 mph.

CR 67, Motor Parkway, is located within the Towns of Smithtown and Islip within the study area. It has a Functional Class of Urban Minor Arterial. CR 67 is an eastbound and westbound highway with two lanes in each direction in the study area. The ordinanced speed limit is 40 mph.

CR 82, Higbie Lane and Udall Road, is a northbound southbound roadway located within the Town of Islip and has a Functional Class of Urban Minor Arterial. It runs from NYS RT 27A (Montauk Hwy) to NYS RT 27 (Sunrise Highway). It has an ordinanced speed limit of 35 mph.

CR 100, Suffolk Avenue, is located entirely within the Town of Islip, from CR 13 (Fifth Avenue) to NYS RT 454 (Veterans Memorial Highway) and has a Functional Class of Urban Minor Arterial. It is an eastbound westbound roadway. CR 100 is a four lane highway from CR 13 to the Brentwood LIRR station and again from CR 17 to NYS RT 454. In between these segments, the road remains two lanes. It has an ordinanced speed limit of 40 mph from CR 17 (Carleton Avenue) east to Veterans Memorial Highway and a speed limit of 30 mph on all other segments from CR 17 (Carleton Avenue) west to CR 13 (Fifth Avenue).

CR 106, Community College Drive connects CR 13 (Crooked Hill Road) and CR 7 (Wicks Road). It is an eastbound and westbound highway with two lanes in each direction. CR 106 is located exclusively within the Town of Islip and it has a Functional Classification of Urban Local. The ordinanced speed limit is 40 mph.

The Suffolk County Department of Public Works maintains the North and South Service Roads of the Long Island Expressway within the study area. I-495S and I-495N, the Long Island Expressway Service Roads, are classified as Urban Principal Arterials. They are two lane one-way roadways with an ordinanced speed limit of 45 mph.

Local Streets and Collector Roads

Long Island Avenue is a 2.13 mile long eastbound and westbound roadway bisecting the study area. It is located within the Towns of Babylon and Islip and has a town speed limit of 30 mph. The western terminus is NYS RT 231, Deer Park Avenue, in the Town of Babylon and the eastern terminus is Heartland Blvd. in the Town of Islip.

Pine Aire Drive is a 1.85 mile long eastbound and westbound roadway bisecting the study area. It is located within the Town of Islip and has a town speed limit of 30 mph. The western terminus is Dunton Avenue and the eastern terminus is at CR 13, Fifth Avenue.

Brentwood Road/Washington Avenue is a north-south two lane roadway which is 5.66 miles in length, located within the Town of Islip and serving the hamlet of Brentwood. Its northern terminus is at CR 67, Motor Parkway and its southern terminus at NYS RT 27A, Montauk Highway. The dividing line for the roadway names is CR 100, Suffolk Avenue, where the roadway is named Brentwood Road to the south and Washington Avenue to the north.

Grand Boulevard is an east-west town roadway that is 3.65 miles in length and located within the towns of Babylon and Islip. It connects CR 2, Straight Path, at its western terminus in Wyandanch to Corbin Avenue in Bay Shore (a direct access to the Deer Park LIRR station). At CR 4, Commack Road, Grand Boulevard provides access to the Tanger at the Arches outlet mall.

Townline Road is a 2.65 mile long north-south town road which has its southern terminus at NYS RT 25 in Commack, and its northern terminus at Old Northport Road in East Northport. Its posted speed limit is 30 mph and it is located entirely within the Town of Huntington.

Harned Road is a north-south town roadway east of Sunken Meadow Parkway. It is located entirely in the Town of Smithtown and runs from CR 67, Motor Parkway, northward to NYS RT 25, Jericho Turnpike, with a posted town speed limit of 30 mph. North of NYS RT 25, Harned Road becomes CR 14, Indian Head Road.

Recent Completed Suffolk County Department of Public Works Permit Projects

Using information from a database used by the Permit Division of SCDPW, a list of permit projects was compiled. The list of permit projects contains information on both private and public projects which have received a highway work permit from DPW, but it doesn't contain information about potential future permit projects. Often during the planning and permitting process, the SCDPW requests that the construction of

proposed projects include improvements to the County highway network.

A full listing of permits issued by the Suffolk County Department of Public Works within the study area from 2001 to the present can be found in Appendix 5.

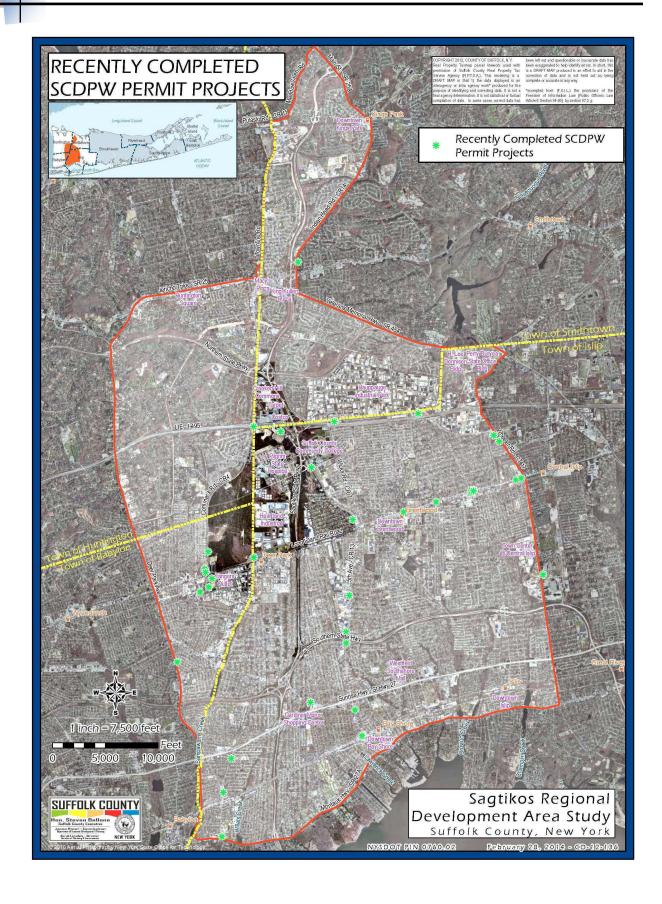
Since 2007, there have been several significant Highway Work Permits issued by the Department for work along the County highways within the study area. Among these are the following, which are displayed on the accompanying map:

CR 4, Commack Rd:

- The Bridgehampton National Bank, on the west side of CR 4, south of Marcus Blvd., added ADAcompliant pedestrian ramps, 155 feet of 5 foot wide concrete sidewalk and new thermoplastic pavement markings.
- Commerce Bank, on the northwest corner of CR 4 and Garnet Street, included ADA-compliant pedestrian ramps, 400 feet of 5 foot wide concrete sidewalk, new thermoplastic pavement markings, and provided a 5 foot land dedication along the CR 4 frontage.
- The Deer Park Shopping Center, on the northwest corner of CR 4 and Long Island Ave, added ADAcompliant pedestrian ramps, 940 feet of 5 foot wide concrete sidewalk, and new thermoplastic pavement markings.
- The Stop and Shop and Kohl's, on the west side of CR 4, between Grand Blvd. and Marcus Blvd., included ADA-compliant pedestrian ramps, repair existing concrete sidewalk, and new thermoplastic pavement markings.
- Tanger, which added a new parking lot to supplement existing parking facility at the Long Island
 Railroad Deer Park Train Station and on CR 4, between the Long Island Expressway North and
 South Service Roads included signal and existing County drainage system modifications, ADAcompliant pedestrian ramps, and new concrete curbing. Furthermore, on Commack Rd, between
 Grand Ave and Burlington Ave, installed and rebuilt traffic signals, ADA-compliant pedestrian
 ramps, 1,500 feet of 5 foot wide concrete sidewalk, and new thermoplastic pavement markings.
- The Home Depot, on the east side of CR 4, north of Marcus Blvd., added ADA-compliant pedestrian ramps and 100 feet of 5 foot wide concrete sidewalk.
- The Texas Roadhouse, on the northwest corner of CR 4 and Long Island Ave, includes pedestrian signal improvements, new thermoplastic pavement markings, and the repair existing concrete sidewalk. This Permit is ongoing.

CR 13. Wicks Road/Crooked Hill Road and CR 13A. Clinton Avenue:

- A New York State Parks Recreation & Historic Preservation project on the southeast corner of CR
 13 and CR 106, Campus Rd, added new thermoplastic pavement markings
- The Fronteras restaurant on the west side of CR 13, Wicks Rd, at Bradley Street, included ADAcompliant pedestrian ramps, 60 feet of 5 foot wide concrete sidewalk, repair existing concrete sidewalk, and new thermoplastic pavement markings.
- Exxon Mobile, on the east side of CR 13 at Howells Rd, included two 32 foot wide accesses with ADA-compliant ramps, remove three existing accesses and add 35 feet of 5 foot wide sidewalk.
- Medical Building, on the west side of CR 13 south of South Spur Drive, included a 28 foot wide



- access with ADA-compliant ramps and 5 foot sidewalk along frontage.
- Chase Bank, on the west side of CR 13 at Drexel Drive, involved the construction of a 35 foot access with ADA-compliant ramps and new sidewalk.
- Keyspan constructed a commercial type access on CR 13A and removed the existing access located on CR 50.
- A retail site on the west side of CR 13, Crooked Hill Rd, south of the Long Island Expressway South
 Service Road, included ADA-compliant pedestrian ramps, 330 feet of 5 foot wide concrete sidewalk,
 and new thermoplastic pavement markings. And a McDonalds on the west side of CR 13 at North
 Spur Drive, included a rights in- rights out only access on CR 13 and 210 feet of new sidewalk, as
 well as a 8 foot dedication along entire frontage are current ongoing permits.

CR 14, Indian Head Road:

 Smithtown Library, on the east side of CR 14 north of NY 25, involved the construction of a 28 foot wide access.

CR 17, Wheeler Road/Carleton Avenue:

- Central Islip Fire Department, on the west side of CR 17 south of CR 67, included the construction of a 40 foot wide access, ADA-compliant ramps, new sidewalk and new traffic signal.
- Vanderbilt Plaza LLC, on the west side of CR 17 south of CR 67, included 160 feet of new 5 foot wide sidewalk and a 15 foot dedication along the entire frontage.
- Homerun Hotel, in the northeast corner of CR 17 and Courthouse Drive, this included a new signal at CR 17 and Hoppen Drive. This permit commenced in early 2013.

CR 57, Bay Shore Road:

 7-11, on CR 57 at Asharoken Boulevard, involved the construction of a right in- rights out 35 foot wide access with ADA-compliant ramps, new 5 foot sidewalk along the frontage and new thermoplastic markings.

CR 67, Motor Parkway:

- 7-11 and gas station, on the south side of CR 67 east of Wicks Road, included two directional entrance and exit only accesses and a dedication along the frontage of the site on CR 67.
- Quadrangle Properties (restaurants and shopping center), on the south side of CR 67 at Kennedy
 Drive, which included a rights in rights out access on CR 67, new sidewalk along the frontage, and
 access to the signal at Kennedy Drive.

CR 82, Higbie Lane:

- West Islip Library, on the east side of CR 82, south of Wilherm Lane, involved the construction of a 28 foot wide access.
- . Chase Bank, on the east side of CR 82 at Carnation Road, involved the reconstruction of existing

- access and new 5 foot sidewalk.
- Bell Garden Estates, on the east side of CR 82, south of Sunrise Highway, involved the construction
 of a 34 foot wide roadway called Curtin Avenue which accesses CR 82, and installation of 660 feet
 of new 5 foot sidewalk.

CR 100, Suffolk Avenue:

- The 9 Brothers Building Supply, on the south side of CR 100 west of First Street, involved the construction of a 35 foot wide access with ADA-compliant ramps and 5 foot sidewalk.
- Brentwood Professional Building, on the south side of CR 100 east of Brentwood Parkway, involved the construction a 28 foot wide access and install 215 feet of new 5 foot sidewalk.
- Universal Church, on the north side of CR 100 west of Fulton Street, involved the construction of a 28 foot access and 215 feet of new 5 foot sidewalk.
- Hess Station, on the north side of CR 100 at Joshua's Path, involved the construction of a 35 foot access and new 5 foot sidewalk.
- Medical Building, on the north side of CR 100 east of Joshua's Path, involved the construction of a 35 foot access and new 5 foot sidewalk.
- Commercial Building, on the south side of CR 100 east of Joshua's Path, involved the construction of a 35 foot access and new 5 foot sidewalk.
- Taco Bell, on the south side of CR 100 west of Carleton Avenue, involved the construction of a 28 foot access and a 18 foot rights out only access.
- An MTA Police Facility on the south side of CR 100 at Carleton Avenue, involved the construction of a 20 foot access and new 5 foot sidewalk.

Traffic Counts

The SCDPW has compiled volume counts for the County Roadways within the study Area. These included automatic traffic recorder (ATR) counts and intersection turning movement counts (TMC).

Suffolk County DPW compiles 24 hour, 7-day ATR information for some 475 control count locations throughout the County. The average of the weeklong data, commonly referred to as Average Daily Traffic (ADT), is routinely collected on a 3-year rotating cycle. By applying seasonal factors as determined by the time of year when the original data is collected, the SCDPW converts the ADTs to Annual Average Daily Traffic (AADT) volumes. This allows for the comparison of traffic data collected throughout the year and provides necessary information for transportation planning professionals to quantify highway levels of service and traffic growth.

There are numerous Suffolk County DPW traffic count locations within the study area. There are fourteen (14) control count sites on CR 4, three (3) on CR 7, fifteen (15) on CR 13,two (2) on CR 14, nine (9) on CR 17, six (6) on CR 50, seven (7) on CR 57, one (1) on CR 66, Seven (7) on CR 67, two (2) on CR 82, two (2) on CR 100 and one (1) on CR 106.

The AADTs on CR 4 range from 14,200 to 36,500 vehicles per day. On CR 7, traffic counts range from

15,800 to 18,300; on CR 13 it ranges from 15,400 to 32,800; on CR 14 it ranges from 12,100 to 16,800; on CR 17 it ranges from 11,500 to 24,200; on CR 50 it ranges from 9,000 to 13,300; on CR 57 it ranges from 9,700 to 22,900; on CR 66 the count averages at 23,500; on CR 67 it ranges from 6,000 to 18,000; on CR 82 it ranges from 11,000 to 21,500; on CR 100 it ranges from 20,200 to 21,700; and CR 106 averages 8,100.

A review of historic AADT data along the twelve (12) County highways in the study area (CR 4, CR 7, CR 13, CR14, CR 17, CR 50, CR 57, CR 66, CR 67, CR 82, CR 100 and CR 106) shows a nearly neutral traffic growth rate over the last decade. The highest growth rate found was an average of 1.8% per year on CR 13. Given the potential for significant redevelopment of older commercial and industrial sites, combined with the probable commencement of a mixed-use project at the former Pilgrim State Psychiatric Hospital, the SCDPW would discourage any interpretation that the next decade will produce similar results without a dramatic change in travel behavior and options. See attached data in Appendix 6.

SCDPW compiled the historic AADT information for the State roadways within the study limits. This information is available on the NYS Department of Transportation (DOT) website at: https://www.dot.ny.gov/divisions/engineering/technical-services/highway-data-services/traffic-data. This information reveals a higher growth rate on the State highways then on the County Roadways. The highest growth rate was on Sunken Meadow Parkway at 2.34% per year over the last decade. The Sagtikos Parkway counts show an annual growth rate of 2.07% since 2000, and the other State highways within the study area show smaller growth rates of 1% or less. See data in Appendix 6.

The Department typically collects intersection turning movement counts (TMCs) as part of constituent or elected official-originated traffic studies and Permit projects. The data is useful in analyzing intersection-specific operational issues. Turning movement locations can be found in Appendix 7.

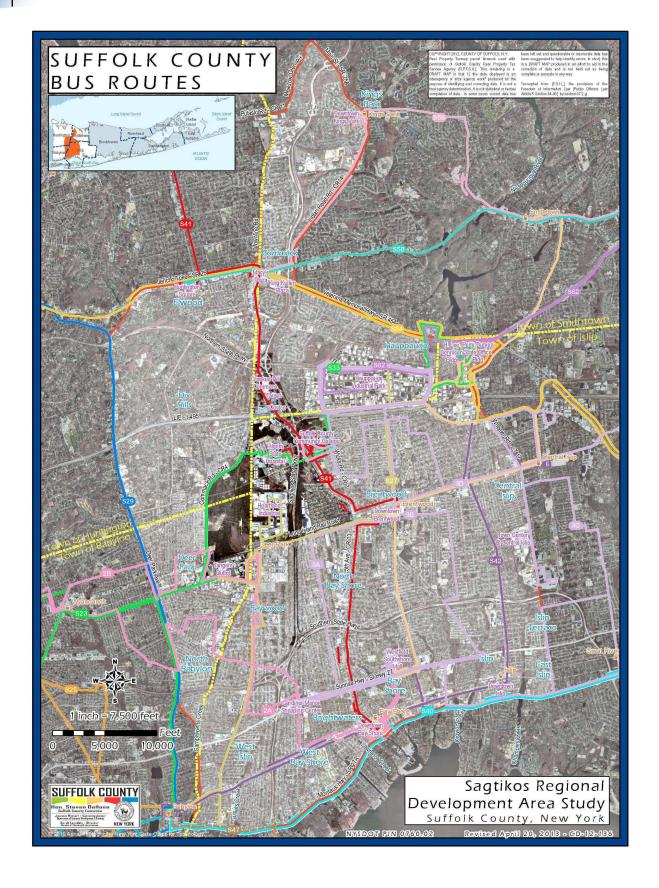
Bus Service and Ridership

Suffolk County has 50 bus routes with 6.2 million riders in 2011. The Sagtikos Regional Development Area is served by 12 Suffolk County bus routes. (Four routes serve the core study area: the S41, S33, S27, and S2A.) Data on ridership information was obtained from the Suffolk County Department of Public Works, Transportation Division.

The most heavily utilized bus route in the study area is Suffolk Transit bus route **\$45**, which runs from Bay Shore to Smithtown and serves the South Shore Mall, Hauppauge governmental offices and the Smithtown railroad station. In 2011 the \$45 served 387,000 riders and was the 3rd most utilized bus route in Suffolk County out of 50 routes. (Suffolk Transit bus route \$1 is Suffolk's largest bus route, with ridership of 692,000 in 2011, 78% more than Suffolk Transit bus route \$45).

Suffolk Transit bus route S40 runs from Babylon to Patchogue and serves the Babylon railroad station, Good Samaritan Hospital, and Montauk Highway. In 2011 the **\$40** had 342,000 riders and was the 5th most utilized bus route in Suffolk County out of 50 routes.

Suffolk bus route \$33 runs from Hauppauge to Amityville and serves southern Commack Road, Pilgrim State Hospital, Suffolk Community College, and the Tanger Outlet Center in Deer Park. In 2011 it served



294,000 riders and was the 7th most utilized bus route in Suffolk County.

Suffolk Transit bus route **\$41** runs from Northport to Bay Shore and serves northern Commack Road, Crooked Hill Road, and Pilgrim State Hospital. In 2011 it served 252,000 riders and was the 8th most utilized bus route in Suffolk County.

Suffolk Transit bus route **3D** runs from Brentwood to Stony Brook and serves Suffolk Avenue, Stony Brook University Hospital, Stony Brook University, and the Smithaven Mall. In **2011** the **3D** had **218**,000 riders and was the **12**th most utilized bus route in Suffolk County out of **50** routes.

Suffolk bus route **\$27** runs from Hauppauge to Babylon and serves the Heartland Industrial Park and the Deer Park Railroad station. In 2011 the \$27 served 182,000 riders and was the 13th most utilized bus route in Suffolk County.

Suffolk Transit bus route **\$62** runs from Hauppauge to Riverhead and serves the Smith Haven Mall, the Port Jefferson railroad station, Rocky Point Shopping Plaza, and the Tanger Outlet Center in Riverhead. In 2011 the \$62 had 161,000 riders and was the 15th most utilized bus route in the County.

Suffolk Transit bus route **3A** runs from Bay Shore to Hauppauge and serves the South Shore Mall, Suffolk County Community College, and the Hauppauge Industrial Park. In 2011 the 3A served 146,000 riders and was the 16th most utilized bus route in Suffolk County.

Suffolk Transit bus route **\$42** runs from Babylon to Central Islip and serves the South Shore Mall, the Islip railroad station, and NYS Route **111**. In 2011 the \$42 had **110**,000 riders and was the 20th most utilized bus route in Suffolk County out of 50 routes.

Suffolk Transit bus route **2B** runs from Bay Shore to Farmingdale and serves the South Shore Mall, the Wyandanch railroad station, and Farmingdale State College. In **2011** the **2B** served **106**,000 riders and was the **21**st most utilized bus route in the County.

Suffolk Transit bus route **\$29** runs from West Babylon to South Huntington and serves the Babylon railroad station, Deer Park Avenue, and the Walt Whitman Mall. In 2011 the \$29 had 89,000 riders and was the 22nd most utilized bus route in Suffolk County out of 50 routes.

Suffolk Transit bus route S2A runs from Bay Shore to Wyandanch, and serves the Tanger Outlet Center in Deer Park, Grand Boulevard, and the industrial areas of Deer Park. In 2011 the S2A served nearly 74,000 riders and was the 24th most utilized bus route in Suffolk County out of 50 routes.

Suffolk Transit bus route **\$56** runs from Commack to Lake Grove and serves Saint Catherine of Siena Hospital and the Smith Haven Mall. In 2011 the \$56 served 48,000 riders and was the 32nd most utilized bus route in Suffolk County out of 50 routes. This line is the least utilized of the 13 bus lines that serve the study area.

Table 25 provides more detail about the bus routes serving the Sagtikos Regional Development Area.

Table 25. Ridership of Bus Routes Serving the Sagtikos Regional Development Area, 2011

Bus Route	Annual Ridership, 2011	Rank Out of 50 Bus Lines	Percentage Change in Ridership, 2008-2011
S45	387,970	3	0%
S40	342,313	4	3%
S33	294,480	7	5%
S41	252,752	8	-4%
3D	218,688	11	NA
S27	182,140	13	4%
S62	161,083	14	-7%
3A	146,245	16	NA
S42	110,850	20	3%
2B	106,336	21	NA
S29	89,011	22	1%
S2A	73,992	24	NA
S56	48,328	26	-3%

 $Source: Suffolk\ County\ Department\ of\ Public\ Works,\ Division\ of\ Transportation.\ NA\ -\ Not\ available.$

Between 2008 and 2011, bus ridership in the study area increased modestly on some lines, and decreased modestly on others.

Rail Service and Ridership

The Sagtikos Regional Development Area is well-served by Long Island Railroad access, with electrified service to Penn Station in Manhattan. The Deer Park railroad station is located in the central part of the Sagtikos Regional Development Area. The mean travel time on the LIRR between Deer Park and Penn Station is approximately 65 minutes. In 1987, the Deer Park train station was moved eastward from a location near Deer Park Avenue to its present larger site in the Town of Islip between Long Island Avenue and Pine Aire Drive. Large parking lots serving the new station were constructed on land owned by Suffolk County. The station remains one of the most heavily utilized in Suffolk County. There are five train stations within the study area:

- Kings Park
- Deer Park
- Brentwood
- Bay Shore
- Islip

Railroad ridership statistics were collected from the MTA information website. The LIRR currently serves 568,383 weekday passengers heading either westbound or eastbound. In Suffolk County, Ronkonkoma, outside the study area, serves as the most significant station for weekday passengers, serving 17,278 commuters. Within the Sagtikos Regional Development Area, the Deer Park train station serves significantly fewer commuters than Ronkonkoma: 5,417 commuters. The Deer Park train station is the 24th most utilized train station out of 127 stations in weekday travelers on the entire LIRR system. *Tables* 26 and 27 provide more detail about the train stations serving the Sagtikos Regional Development Area.

Table 26. Weekday Ridership for LIRR Stations in the Study Area

Train Stations	Total Daily Ridership (Includes Eastbound and Westbound Passengers)	Rank out of 122 LIRR Train Stations
Deer Park	5,417	24
Brentwood	2,750	42
Kings Park	1,876	52
Bay Shore	1,622	59
Islip	820	84

Source: Long Island Rail Road, 2012 Ridership Book.

Table 27. Weekend Ridership for LIRR Stations in the Study Area

Train Stations	Total Daily Ridership (Includes Eastbound and Westbound Passengers)	Rank out of 122 LIRR Train Stations
Brentwood	4,333	14
Deer Park	3,893	16
Bay Shore	1,717	35
Kings Park	560	70
Islip	428	78

Source: Long Island Rail Road, 2012 Ridership Book

Exploring Bus Rapid Transit (BRT) in Suffolk County

While the Suffolk County bus system, Suffolk County Transit, operates traditional bus lines on major roadways within the study area, there may be opportunity to develop express modes of travel, improve transit access, and create rapid north-south connections between major assets within the study area. BRT may be particularly well suited to create enhanced connections between certain assets and generate mobility improvements and economic development because of its operational flexibility and lower cost implementation as compared to other mass transit modes such as light rail. For example, the proposed Heartland Town Square development could potentially utilize BRT to maximize its connections to other

transit oriented developments, employment centers, railroad stations, retail centers, and education facilities, which would in turn help to facilitate job growth.

In May 2014, Suffolk County completed a grant-funded countywide BRT study, the Suffolk County BRT Feasibility Study, in support of County Executive Steve Bellone's "Connect Long Island" initiative. This comprehensive regional transportation and development plan will help facilitate an innovation economy and sustainable growth by supporting Transit Oriented Developments and building a 21st century transportation infrastructure. This transportation infrastructure connects development hubs to major research and educational institutions and innovation zones for emerging hi-tech companies. Results of the BRT Feasilibty Study identified the Sagtikos Parkway as one of three potential roadways suitable for BRT development, requiring additional studies prior to implementation.

Environmental Conditions

Environmental conditions within the Sagtikos Regional Development Area are reviewed in this section. Several topics are discussed, and brief descriptions of each topic, pertaining to the study area, are included below.

Geological History

Long Island belongs to the inner part of the Atlantic Coastal Plain Province. Located at the boundary between two topographic provinces, Long Island has features typical of the New England region along its North Shore, while its South Shore resembles the coastal plain extending southward to Florida.

Long Island consists of sedimentary rocks and unconsolidated deposits lying on Precambrian rocks (gneiss) which outcrop in Connecticut and at the extreme west end of the Island (M. L. Fuller. 1914. The Geology of Long Island, New York. U.S. Geol. Survey Prof. Paper 82.) The deepest sediment deposits, consisting of Cretaceous clays, are exposed at the surface on several of the North Shore peninsulas, locally called "necks." The present topography of Long Island is the result of glacial deposition on the eroded Cretaceous surface.

Most of Long Island was formed during the Pleistocene Age (the period from 10,000 years to 3 million years before the present), and consists of sands and gravels covering the older stream-eroded surfaces. These Pleistocene deposits are glacial moraines and outwash plains deposited by streams. Three periods of extensive erosion separated the various Pleistocene deposits. Deposits accumulated since the last sea level rise consist of peats (fresh-water and salt-marsh), and beach and dune sands reworked from the older glacial deposits.

The major topographic features of Long Island are the plateaus of the north shore, the ridges (glacial moraines) forming the island's "backbone," and the gently sloping plains of the southern portion of the Island formed by sediment deposited in front of the glacier. The Ronkonkoma Moraine (central part of the Island and the south fork) and Harbor Hill Moraine (north shore) and their associated outwash plains were deposited on the plateau by melt water from glaciers.

The surficial deposits in the study area are described and mapped in Hydrology of the Babylon-Islip Area,

Suffolk County, Long Island, New York. (U. S. Geological Survey Water-Supply Paper 1768). The core of the study area in the Towns of Babylon, Islip and Huntington consists of outwash plain deposits of stratified medium to coarse sand and gravel. A very small portion of the northern leg of the core in the Town of Smithtown consists of unsorted till from the Ronkonkoma Moraine. Till is also found in the vicinity of the Hauppauge Industrial Park in the Towns of Smithtown and Islip.

Glacial till is also found in the extended study area at higher elevation locations in the Half Hollow Hills section of the Town of Huntington. The rest of the extended study area consists of outwash deposits. Recent marsh deposits are found along stream corridors.

Elevation and Shaded Relief

The accompanying map titled "Elevation and Shaded Relief" shows the elevation of the entire study area. The bulk of the study area consists of the gently sloping glacial outwash plain that extends from the central spine of Long Island south to the shoreline of the south shore bays. Generally, elevations in the area range from roughly 40 feet above sea level to 140 feet above sea level. However, the highest elevations – on the order of 300 feet – are found along the Ronkonkoma terminal moraine in the vicinity of Dix Hills. To the north of this area, the drainage pattern is more deeply dissected given the occurrence of the Harbor Hill terminal moraine along the north shore of Suffolk County.

Soils

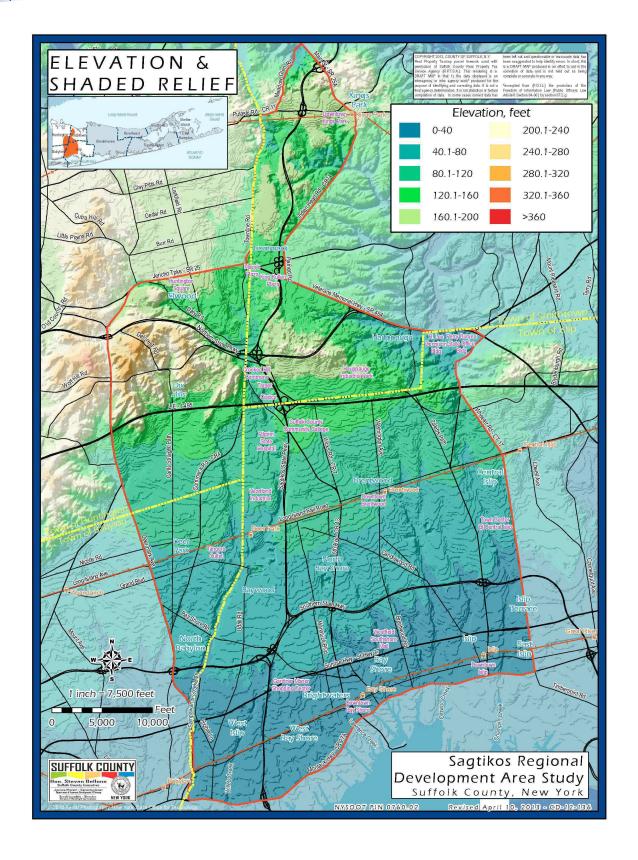
The "General Soil Map" contained in the report Soil Survey of Suffolk County, New York published by the U. S. Department of Agriculture, Soil Conservation Service was used to identify the soil associations found in the study area. A soil association is a landscape that has a distinctive proportional pattern of soil types. The location of soil associations is useful as a general guide for managing a watershed, woodland or wildlife area, or planning for community development and recreational facilities. More detailed knowledge of the local distribution of specific soil types within each association is needed for conducting engineering studies for transportation facilities, road and structures. Large scale maps showing this information are available in the 1975 report.

There are three soil associations occurring in the study area: the Haven-Riverhead association; the Carver-Plymouth-Riverhead association; and the Riverhead-Plymouth-Carver association. Descriptions of these soil associations follow.

Haven-Riverhead association: Deep, nearly level to gently sloping, well-drained, medium-textured and moderately coarse textured soils on outwash plains.

The Haven-Riverhead association is predominant and found in roughly 70% of the study area. This well-drained, medium-textured, outwash plain soil association occurs on level to gently sloping sectors in the area. Slopes range from 1 to 12%. Due to good permeability and ease of excavation, such soils are generally suitable both for farming (with supplementary irrigation) and for residential development.





Carver-Plymouth-Riverhead association: Deep, rolling, excessively drained and well-drained, coarse textured and moderately coarse textured soils on moraines.

The Carver-Plymouth-Riverhead association is present in about 15% of the study area. Found on slopes ranging from nearly level to steep, these coarse-textured sandy soils and sandy loams occupy a small, rolling morainal area south of the Northern State Parkway. Although the sandy texture and steep slopes limit farming uses, the soils are well suited for housing and recreational purposes.

Riverhead-Plymouth-Carver association: Deep, nearly level to gently sloping, well-drained and excessively drained, moderately coarse textured and coarse textured soils on the southern outwash plain.

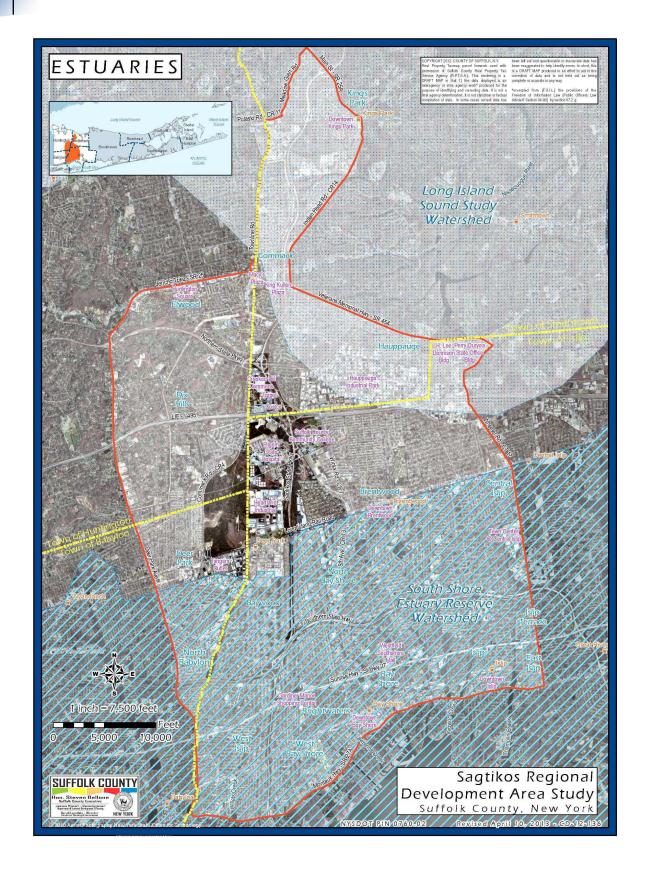
The Riverhead-Plymouth-Carver association is found in the remaining 15% of the study area, generally south of Sunrise Highway. This association is made up of well-drained, coarse-textured soils of the southern outwash plain laid down by outwash deposition beyond the limits of the glacier and therefore free of kettle hole formations. Characteristically nearly level, slopes generally range from 1 to 6% percent, except on the sides of drainage channels, where slopes can range from 8 to 35%. This association is mainly in woods or within areas of urban expansion. Level topography, ease of excavation, and good drainage generally make this association well suited to urban and suburban developments.

The text cited above is taken directly from the Soil Survey of Suffolk County, New York published in 1975. In addition to the potential residential uses cited by the soil survey, the three soils in the study area are also suited for commercial and industrial development.

Estuaries

The accompanying map titled "Estuaries" shows that the northernmost section of the study area is located within the Long Island Sound Study Watershed; while the southern half of this study area is part of the South Shore Estuary Reserve Watershed. A brief overview of these two estuary programs are as follows:

- Long Island Sound Study Comprehensive Conservation and Management Plan The Long Island Sound CCMP was completed in 1994. It identified six problems affecting the Sound: 1. low dissolved oxygen; 2. toxic contamination; 3. pathogen contamination; 4. floatable debris; 5. the impact of water quality problems and habitat degradation and loss on the health of living resources; and 6. land use and development resulting in habitat loss and degradation of water quality. Resolution of nutrient enrichment was determined to be the key factor in improving water quality. Hence, implementation of the CCMP has focused on the reduction of nitrogen loadings under a long-term, three phase approach. Further information on the Long Island Sound Study CCMP can be found at the following website: http://longislandsoundstudy.net/about/our-mission/management-plan/.
- Long Island South Shore Estuary Reserve Comprehensive Management Plan The New York State
 Department of State, Division of Coastal Resources completed the Long Island South Shore Estuary
 Reserve Comprehensive Management Plan (SSER CMP) pursuant to the Long Island South Shore
 Estuary Reserve Act of 1993. The plan (dated April 2001) contains numerous recommendations to





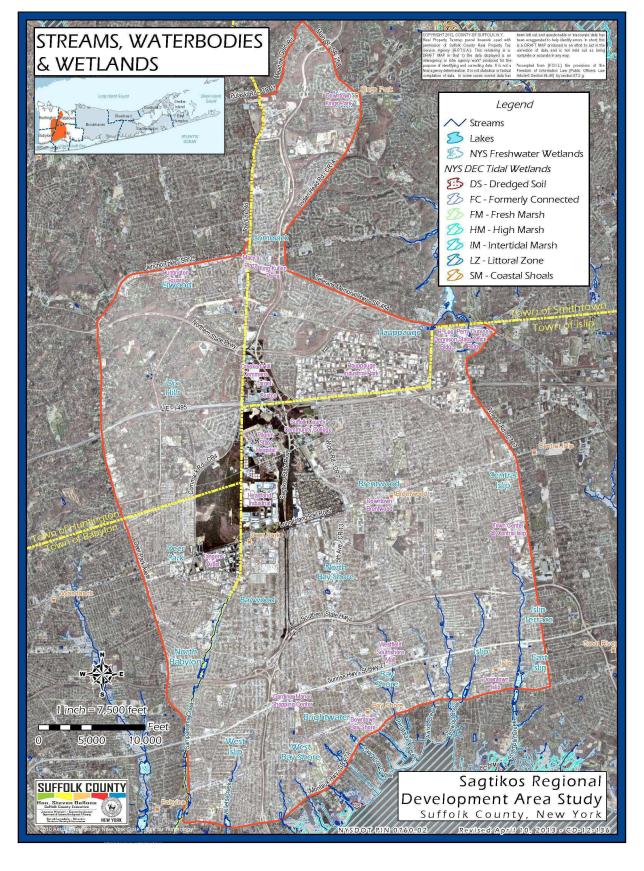
improve and maintain water quality, protect and restore living resources, expand public use and enjoyment of the estuary, sustain and expand the water-related economy, and increase education, outreach and stewardship; implementation actions are included. They are designed to achieve various outcomes, such as reduce non-point source and point source pollution; increase harvest levels of hard clams and other species; protect and restore coastal habitats; protect open space; improve knowledge for ecosystem management; increase public use of the estuary; sustain water-dependent businesses and maritime centers; heighten public awareness; and advance inter-governmental coordination efforts. Further information on the SSER CMP can be found at the following website (pdf): http://www.dos.ny.gov/communitieswaterfronts/pdfs/SSERCMP.pdf

Streams, Water Bodies, and Wetlands

The accompanying map titled "Streams, Water Bodies, & Wetlands" shows the location of all water bodies and wetlands within the study area. In the southernmost portion study area, nine creeks drain south into the Great South Bay, and one river drains north into the Long Island Sound (See Table 28). All non-tidal portions of the river and creeks that are located within the study area currently hold a Class C (fresh surface water) Water Quality Classification, as determined by the New York State Department of Environmental Conservation (NYSDEC), and are suitable for fish, shellfish, and wildlife propagation and survival. Two creeks are classified by the NYSDEC as Trout Waters (indicated by T in Table 28) and one is classified as Trout Spawning Waters (indicated by TS in Table 28). These creeks are significant because of their value as trout habitat. Ponded areas associated with a few of the longer creeks are also associated with freshwater wetlands located within the study area.

Table 28. Freshwater Creeks and Rivers within the Sagtikos Regional Development Area

	Creek/River Name (West to East)	Water Quality Classification	Standards
Creek	s drain into Great South Bay:		
1	Sampawams Creek	С	C(T)
2	Willets Creek	С	С
3	Trues Creek	С	С
4	Thompsons Creek	С	С
5	Lawrence Creek	С	С
6	Penataquit Creek	С	С
7	Awixa Creek	С	С
8	Orowoc Creek	С	C(T)
9	Champlin Creek	С	C(TS)
River d	rains into Long Island Sound:		
10	Nissequogue River	С	C(T)
Note: Class	ifications are as per 6 NYSCRR Part 925.		
	ss C fresh surface waters. The best usage of Class C waters is fishing. T although other factors may limit the use for these purposes. As per 6 NY	hese waters shall be suitable for fish, shellfish and wildlife propagation and survive SCRR Part 701.	al. The water quality shall be suitable for primary and secondary contact
(a) The syn thermal crit (b) The sym	erion that specifically refers to trout or trout waters applies.	tion tables of Parts 800-941 of this Title, means that the classified waters in that sp attion tables of Parts 800-941 of this Title, means that the classified waters in that sers or trout snawning waters applies. As per 6 NYSCRR Part 701.	





Source: Suffolk County Division of Planning and Environment

Navigable Waters

Water bodies that occur within the study area were also identified based on data from the NYSDEC, Assigned Classifications and Standards for Quality and Purity. Most of the currently identified water bodies located within the study area are classified by the NYSDEC as either Class C (Fresh Surface Waters, indicating waters supporting fisheries and suitable primary and secondary contact recreation); Class C(T) (Fresh Surface Waters, indicating waters supporting fisheries and suitable for primary and secondary contact recreation); or Class C(TS) (Fresh Surface Waters, indicating waters supporting fisheries and suitable for primary and secondary contact recreation) creeks and streams.

In general, the headwaters of the streams and creeks in the study area are very shallow, and are not used for navigational transport activities in support of water borne commerce in the region.

Wild/Scenic/Recreational Rivers

There are no State Wild, Scenic or Recreational (WSR) river segments that fall within the study area. However, the headwaters of the Nissequogue River are located immediately outside the northeastern boundary of the study area, across from the New York State and Suffolk County offices on Veterans Memorial Highway in Hauppauge. Under the State Wild, Scenic and Recreational Rivers Systems Act (Title 27 of Article 15 of the Environmental Conservation Law), portions of the Nissequogue River located to the north of the study area are designated as both a Scenic and Recreational River.

Groundwater Management Zones

The accompanying map titled "Groundwater Management Zones" indicates that the northern half of the study area lies within Zone I, while the southern portion falls within Zone VII. Zone I is a deep flow groundwater recharge area. Zone VII is a shallow groundwater flow regime. The respective zone designations are significant in that different construction requirements for each zone are specified in Article 6 and Article 7 of the Suffolk County Sanitary Code. These requirements are as follows:

Article 6 – Realty Subdivisions, Developments and Other Construction Projects contains requirements for sewage and water supply facilities for subdivision or developments. It requires public water supply for any parcel less than 40,000 square feet, and provides minimum size for septic tanks and leaching pools and includes details for the design of septic systems.

Article 7 – Water Pollution Control provides additional protection to deep recharge areas and water supply sensitive areas from discharges of wastes and hazardous materials. It also includes additional restrictions pertaining to storage of hazardous materials in deep recharge areas and water supply sensitive areas.

In general, a community sewage system is required for realty subdivisions in Zones I and VII with parcels



less than 20,000 square feet in area.

Sewered Areas and Sewage Treatment Plants

The accompanying map titled "Sewered Areas & Sewage Treatment Plants" shows which areas of the study area are served by municipal and private sewage treatment plants. Sanitary wastes generated within the study area are either discharged from on-site disposal systems without treatment to groundwater in non-sewered areas, or pumped to sewage treatment plants (STPs) that are either operated by Suffolk County, or are privately owned and operated. Discharges from the study area enter groundwater from on-site disposal systems and STPs, or are pumped after treatment to marine outfalls in Long Island Sound and the Atlantic Ocean.

Table 29 shows the acreage within the study area served by Suffolk County sewer districts, contractees to Suffolk County sewer districts, and privately owned STPs.

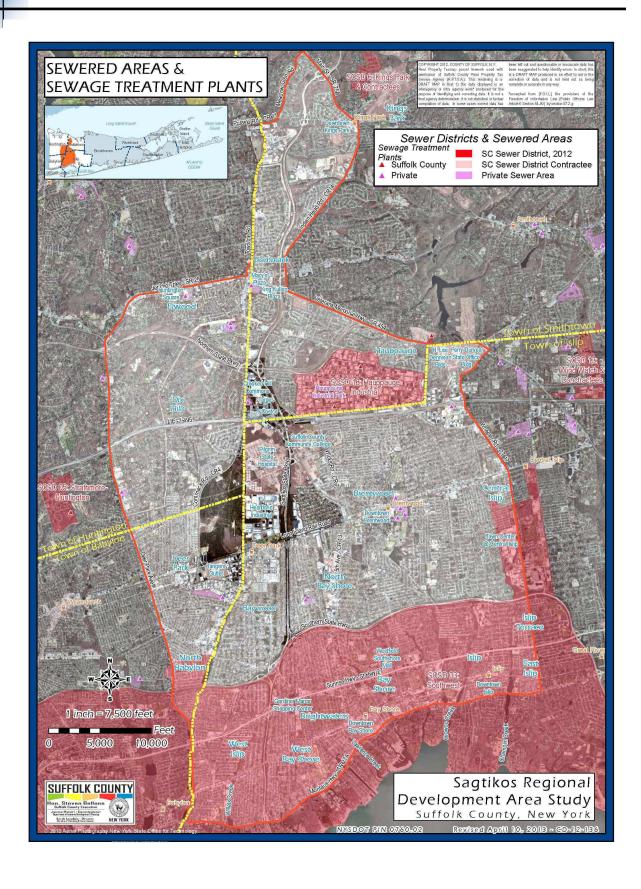
Table 29. Areas Served by Sanitary Sewers within the Sagtikos Regional Development Area

Sewered Areas	Acres	Percentage of Study Area
Suffolk County Sewer Districts	11,450.2	29.1
Suffolk County Sewer District Contractees	1,416.7	3.6
Areas Sewered by Privately Owned STPs	140.9	0.4
Total Sewered Area	13,007.8	33.0
Total Non-Sewered Area	26,399.6	67.0
Total Study Area	39,407.4	100.0

Source: Suffolk County Division of Planning and Environment

More than 13,000 acres or about one-third of the study area is served by sanitary sewers. Two-thirds of the study area is not served by sanitary sewers. Areas served by private STPs total less than one percent of the study area (141 acres). Within the study area these contractees encompass a total area of 1,417 acres, 4% of the study area. Detailed information about the contractees within the study area is as follows:

- In the Town of Babylon portion of the study area, three contractees (including Tanger Outlets at the Arches), pump to the Suffolk County Sewer District 03 STP.
- There are no contractees in the Town of Huntington portion of the study area.
- Contractees in the Town of Smithtown are served by two Suffolk County Sewer Districts located beyond the study area boundary. Three contractees located in the Kings Park area are connected to the Suffolk County Sewer District No. 06 Kings Park STP. Two other contractees are connected to the Suffolk County Sewer District No. 22 Hauppauge Municipal STP.





In the Town of Islip portion of the study area, the H. Lee Dennison and Perry Duryea State Office
complexes are served by the Hauppauge Municipal STP. All other contractees, including the Pilgrim
State Hospital grounds and Suffolk Community College Campus, pump their waste to the County
Sewer District No. 03 STP at Bergen Point.

Five Suffolk County STPs serve portions of the study area. As indicated in *Table 30*, Suffolk County Sewer District No. 18N and 18S, in Smithtown, are the two STPs that are located within the boundary of the study area; while Suffolk County Sewer Districts No. 03, 06 and 22 are located outside of the study area in the Towns of Islip and Smithtown.

Parts of two Suffolk County Sewer Districts lie in the study area: Sewer District 03 – Southwest; and Sewer District 18 – Hauppauge Industrial. There are no town or village sewer districts in the study area. Within the study area, sewer districts serve 11, 450 acres or 29% of the study area. In addition, within the study area there are areas that are connected to a Suffolk County STP but are not within the established boundary of a County Sewer District. These areas are known as Suffolk County sewer district contractees.

Table 30. Suffolk County Sewage Treatment Plants Servicing Portions of the Sagtikos Regional Development Area

STP Map ID#	Sewer District STP Name	Permitted Flow ^A (mgd)	SPDES Permit #B	Level of Treatment	Outfall ^c	Notes
C-03*	Southwest	30.500	NY0104809	Secondary	SW-M	Additional 10 mgd planned expansion
C-06*	Kings Park	0.600	NY0023311	Tertiary	SW-M	
C-18N	Hauppauge Industrial - Heartland	0.200	NY0084514	Tertiary	GW	To be abandoned and pumped to ITT
C-18S	Hauppauge Industrial - ITT	0.250	NY0136964	Tertiary	GW	Expansion to 1.65 mgd to be completed 2013
C-22*	Hauppauge Municipal	0.202	NY0066028	Tertiary	GW	
* STP located	outside the study area.					
A: Permitted F	low is the flow listed on the State F	Pollution Discharge Elimination	n System (SPDES) permit. It is	s, most times, the same as th	e design flow of the pla	ant.
each STP in S		, effluent charts, pollutant load	ding reports, water quality repo			provide a vast amount of information and data on ler the Clean Water Act can be viewed and
C: SW-M = ma	rine surface water outfall, GW = g	roundwater outfall.				

Source: Suffolk County Division of Planning and Environment's Sewer Infrastructure database (http://gisportal.suffolkcountyny.gov).

The study area also includes 13 Private STPs which service apartments, assisted living facilities, condominium complexes, healthcare facilities, and hotels located within the Towns of Babylon, Huntington, Islip and Smithtown, as indicated in *Table 31*. All 13 of these Private STPs discharge from the study area



and enter groundwater.

Table 31. Private Sewage Treatment Plants Located within the Sagtikos Regional Development Area.

STP Map ID#	STP Name	Permitted Flow ^A (mgd)	SPDES Permit # ^B	Levelof Treatment ^A	Outfall ^c
Town of Bab	ylon				
P-BA-01	Quail Run	0.0860	NY0065391	Tertiary	GW
Town of Hun	tington				
P-HU-02	Bristal East Northport	0.0150	NY0278793	Tertiary	GW
P-HU-03	Gurwin Jewish Assisted Living	0.0400	NY0253111	Tertiary	GW
P-HU-04	Gurwin Jewish Geriatric Center	0.0450	NY0197777	Tertiary	GW
P-HU-10	Stone Ridge @ Dix Hills	0.0150	NY0253171	Tertiary	GW
Town of Islip	1				
P-IS-03	Broadway West	0.0150	NY0227056	Tertiary	GW
P-IS-13	Heritage Gardens At Brentwood	0.0300	NY0077348	Secondary	GW
P-IS-16	Holiday Inn Express	0.0150	NY0227285	Tertiary	GW
P-IS-20	Lexington Village	0.0300	NY0077399	Secondary	GW
P-IS-27	Ross Health Care Center		Under Construc	tion	
P-IS-32	St. Annes Gardens	0.0150	NY0266329	Tertiary	GW
Town of Smi	thtown				
P-SM-03	Fairfield Village Garden Apts. (Groton)	0.0250	NY0074314	Secondary	GW
P-SM-06	Memorial Sloan Kettering	0.0050	NY0266353	Tertiary	GW
	Total	0.3360			

A: Permited Flow is the flow listed on the State Pollution Discharge Elimination System (SPDES) permit. It is, most times, the same as the design flow of the plant.

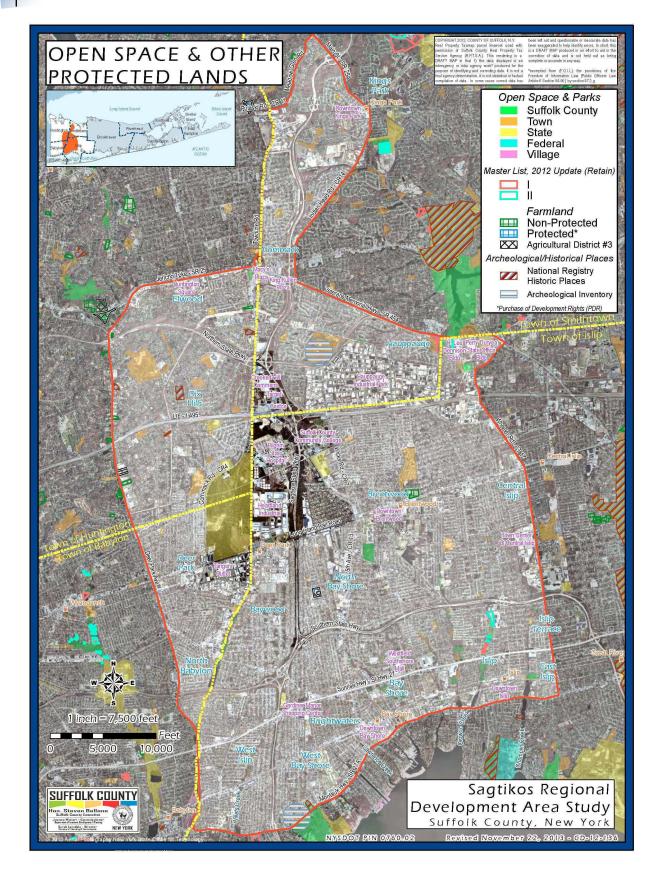
B: The U.S. Environmental Protection Agency Enforcement & Compliance History Online (ECHO) website (http://www.epa-echo.gov/echo/) can be searched to provide a vast amuont of information and data on each STP in Suffolk County. Compliance reports, effluent charts, pollutant loading reports, water quality reports and other information for regulated facilities under the Clean Water Act can be viewed and downloaded by conducting searches using the unique SPDES permit number for each STP.

C: GW = groundwater outfall.

Source: Table based on the Suffolk County Division of Planning and Environment's Sewer Infrastructure database

Open Space and Parks

Suffolk County Parkland



Suffolk County owns 167 acres of parkland within the Sagtikos Regional Development study area. County parkland acquisitions serve to provide regional recreational activities as well as protect important environmental resources and significant ecological areas, including wetlands, drinking water supplies, river corridors, and upland habitat, such as the Pine Barrens. The County also acquires parkland to preserve historic sites and cultural resources, as well as land for active recreational uses and hamlet parks.

In the Town of Islip portion of the study area, there are 160 acres of County parkland. The County has focused its parkland acquisitions in Islip in wetland and stream corridors in order to protect surface waters in tributaries to the Great South Bay. County holdings in stream corridors include 22.1 acres in the Doxees Creek watershed, 17.7 acres in the Orowoc Creek watershed, 16.5 acres in the Sumpwams Creek watershed, 15.8 acres in the Champlin Creek watershed, 10.2 acres in the Penataquit Creek watershed, 2.1 acres in the Awixa Creek area, 1.7 acres along Willets Creek, and 0.1 acres along Trues Creek. County Parkland in Islip also includes Sagtikos Manor in West Bay Shore, which was acquired in 2002 for historic preservation. The original section of the house was built circa 1692. In 1935, Robert David Lion Gardiner inherited the estate and began opening the house to the public. Sagtikos Manor was listed on the National Parks Service's National Register of Historic Places in 1976. Other major County parks in the Islip portion of the study area include the Bishop's Tract County Nature Preserve in Brentwood, which is a 37.8 acre wooded parcel just south of Brentwood High School, and the County ball fields on Kings Highway in Hauppauge.

In the Town of Babylon portion of the study area, there is slightly over one acre of County parkland in the area known as the Sumpwam's Creek County Wetlands.

There is one 5.3 acre parcel of County parkland in the Town of Huntington portion of the study area located near the junction of Commack Road and Jericho Turnpike in Commack. The property was acquired by the County in 2005 for active recreational purposes in partnership with the Town of Huntington, wherein the Town will be responsible for developing and maintaining the site for active recreational use (ball fields).

The Town of Smithtown portion of the study area includes one County park. Cannon Park is a 0.8 acre hamlet park located in Commack at the junction of Jericho Turnpike and Veterans Memorial Highway.

Proposed Suffolk County Parkland Acquisitions

In 2012, the County Division of Planning and Environment completed the *Comprehensive Master List Update*, which is a list of proposed open space acquisitions in Suffolk County. The Master List identifies environmentally sensitive lands that the Division has determined should be preserved as open space, including sites containing tidal and/or freshwater wetlands and their buffer areas, native woodlands, meadows and grasslands, including federally or state protected endangered or threatened species, New York State Natural Heritage Program Elements, and unique geological features, sites located within the watershed of a stream, river corridor, or lake system, within a County-designated Special Groundwater Protection Area (SGPA), adjacent to a water body, and sites determined by the Division to be necessary for maintaining the quality of surface and groundwater in Suffolk County. Additionally, environmentally sensitive sites which are adjacent to other protected lands are targeted in order to create contiguous blocks of open space. An emphasis is placed on acquisitions that will consolidate County parkland holdings. The Master List consists of 1,040 parcels. Within the Smithtown and Islip portions of the study area, there are

eight parcels that were identified for acquisition. In the Town of Smithtown three parcels, consisting of 14.8 acres, have been targeted for open space acquisition, an area known as the Hauppauge Springs assemblage, located along Veterans Memorial Highway in Hauppauge. In the Town of Islip portion of the study area, an additional four parcels totaling 14.8 acres in the Doxsees Creek watershed and one 0.1 acre parcel in the Champlin Creek watershed in the hamlet of Islip have been proposed for acquisition.

New York State Open Space

The most significant open space component in the study area is the New York State owned Oak Brush Plains State Preserve at Edgewood (Edgewood Preserve), located in the core of the study area. This 813 acre preserve is located in both the Town of Babylon (in Deer Park) and the Town of Huntington (in Dix Hills). The land was originally part of a much larger property acquired by the state in the 1930s known as the Pilgrim State Psychiatric Facility. In 1983 and again in 1999, the New York State Office of Mental Health transferred surplus acreage of the Pilgrim State Psychiatric Facility to the New York State Department of Environmental Conservation (NYSDEC), and in the mid-1990s the NYSDEC purchased a 100-acre block of adjacent land. The Edgewood Preserve is dominated by pitch pine-scrub oak species and is known as the Oak Brush Plains, a rare native habitat community characterized by dense oak shrub thickets amongst Pitch Pine trees, compared with the more tree-dominated Pine Barrens. Uses at the site include hiking and bike trails and a model airplane flying field. The NYSDEC is anticipating adding a pavilion with picnic tables and a guided nature walk.

Other Municipal Open Space

Town and Village open space and parkland holdings total 925 acres in the study area. There are about 342 acres of Town-owned open space and parkland in the Town of Huntington portion of the study area. Major parks include the 173-acre Dix Hills Park which provides a golf course, indoor ice skating rink, and an outdoor pool. Adjacent to the Dix Hills Park is a 12 acre wooded open space area known as DeForest Nature Park. Additional town parks include Ostego Park, a 62 acre site in Dix Hills with ball fields, a playground, tennis court, basketball court, and a roller rink, and Wicks Park (10 acres) in Commack, which includes baseball fields, a basketball court and a playground.

The Town of Smithtown open space and parkland holdings in the study area total 233 acres. They include: the Hoyt Farm Nature Preserve, which is a 133 acre park with nature trails, ball fields and educational programs; Burr Winkle Park, a 10 acre park in Commack with ball fields, tennis and basketball courts and a playground; Valmont Park in Commack, which is a 10 acre site that includes ball fields and tennis courts; and the Memorial Park, a 7 acre site with ball fields in Kings Park.

There are 316 acres of Town-owned open space and parkland in the Town of Islip portion of the study area. Brookwood Hall Park is a 45 acre site that includes the Brookwood Hall Building, a Georgian Revival house built 1903 that has been a private home and an orphanage. The building now houses Town offices, the Islip Art Museum, and the Islip Arts Council. The site also includes ball fields and tennis courts. The town has open space holdings in the wetland and stream areas of Sumpwams, Willets, Penataquit, Champlin, Awixa, Orowoc and Dosxees Creeks, where the County has also acquired open space for the purpose of protecting surface waters and associated watersheds. Town holdings also include various recreational sites, including: the 101 acre town golf course known as the Brentwood Country Club; the 6 acre Brentwood Recreation



Center site; and Timberline Park, a 26 acre park in Brentwood that includes a pool and ball fields. There are 8.2 acres of open space and parkland owned by the Village of Brightwaters in the Town of Islip, which includes a five acre site known as Wohseepee Park.

The Town of Babylon portion of the study area includes 21 acres of Town-owned open space and parkland, including 10 acre Birchwood Park in Deer Park, which includes ball fields; and Pine Acres Park, a 5 acre site with ball fields and a playground in Deer Park. There are also five acres of Village-owned open space along Sumpwams Creek in the Village of Babylon.

The accompanying map titled "Open Space & Parks" shows the locations of all Federal, State, County, Town, and Village open space and parkland in the study area. These include smaller non-contiguous parcels, small Town and Village parks, and County Golf Courses. There are 2,048 acres of open space and parkland located within the study area. This total accounts for 5% of the total study area, as indicated in *Table 32*. Most of the open space and parkland acreage is held by New York State, and by the towns in the study area.

Table 32. Publicly Owned Open Space and Parkland within the Sagtikos Regional Development Area

Government Jurisdiction	Acres	Percentage of Study Area
Suffolk County	190.7	0.5%
Town	911.9	2.3%
Village	13.0	0.0%
New York State	933.1	2.4%
Federal	0.0	0.0%
Total Publicly Owned Open Space and Parkland	2,048.7	5.2%
Total Other Uses	37,358.8	94.8%
Total Study Area	39,407.4	100.0%

Source: Suffolk County Division of Planning and Environment

The Edgewood Preserve is also situated within the Oak Brush Plains Special Groundwater Protection Area, as designated in The Long Island Comprehensive Groundwater Protection Area Plan in 1992 by the Long Island Regional Planning Board. This Special Groundwater Protection Area is a primary source of drinking water for residents of Suffolk County.

Agricultural Resources

Protected Farmland

In addition to acquiring parkland for open space preservation and recreational purposes, the County also

purchases the development rights to agricultural lands to protect farmland from non-agricultural development. The County's Purchase of Development Rights (PDR) Program began in 1974 and was the first of its kind in the nation. There is one farm in the County's PDR program that is located within the study area. It is known as the Brightwaters Farm and located in the hamlet of Bay Shore in the Town of Islip. It was acquired by the County in 1984 and is 11.0 acres is size

Unprotected Farmland

Farmland in the Town of Huntington portion of the study area consists of two unprotected farms, and two unprotected agricultural properties that are currently non-operational. Half Hollow Hills Nursery (12.0 acres), Bissett Nursery (4.1 acres), and the vacant agricultural site known as the David K. Blachly Property (7.1 acres) are located in Dix Hills. The Arthur J. Auspaker Revocable Trust Property, formerly known as Auspaker Arthur Nursery, is a 3.3 acre vacant agricultural site located in Commack. There is one unprotected farm in the Town of Islip portion of the study area. The farm is an equestrian operation in Brentwood, known as Knoll Farm. It is comprised of two parcels of land totaling 17.0 acres.

Farmland in Agricultural Districts

The New York State Department of Agriculture and Markets Agricultural District program is administered by local County governments. The program affords enrolled farmlands certain protections to help maintain viable agricultural operations and makes those lands eligible for agricultural tax assessments. Within the study area, the Brightwaters Farm PDR property is located in Suffolk County Agricultural District (AD) 3. An additional parcel that is part of the Brightwaters Farm operation, but not in the County's PDR program, is also in AD 3. It is not identified as farmland because it is used for vehicle storage and retail sales. The Half Hollow Hills Nursery, consisting of three parcels of land within the Town of Huntington, is also located within AD 3.

Historic Resources

The study area includes 11 places certified on the National Park Service's National Register of Historic Places, which serves as the official list of the historic places within the United States that should be preserved. In the Town of Islip these include the First Congregational Church of Bay Shore, the Bay Shore Methodist Episcopal Church, the United States Post Office in Bay Shore, the Bay Shore Hose Co. No. 1 Firehouse, the Modern Times School in Brentwood, and Sagtikos Manor, located on County parkland in West Bay Shore. Sites in the Town of Huntington that are on the National Register of Historic Places include the Commack Methodist Church and Cemetery and the Marion Carll Farm in Commack and the Carll House, the Seaman Farm and the Coltrane House, all located in Dix Hills. The Town of Huntington purchased the Coltrane House in 2006.

Rare, Threatened, and Endangered Species

Threatened and Endangered species identified by the U.S. Fish and Wildlife Service (USFWS) and NYS Natural Heritage data are listed in *Tables 33 and 34*, respectively.

While the majority of these species are not likely to occur within the study area, the information above was the most detailed data available for Suffolk County. The NYSDEC does maintain a list of Endangered,

Threatened and Special Concern Fish & Wildlife Species of New York State, which lists those species that are found, have been found, or may be expected to be found in New York State. However, that list was determined to be too broad given the narrow geographical scope of this study. The NYSDEC does not currently maintain regionalized lists of endangered, threatened and special concern fish and wildlife species.

Table 33. Threatened and Endangered Species Occurring in Suffolk County

Group	Name	Status
Birds	Piping Plover (Charadrius melodus)	Threatened
Birds	Roseate tern (Sterna dougallii dougallii)	Endangered
Flowering Plants	Sandplain gerardia (Agalinis acuta)	Endangered
Flowering Plants	Seabeach amaranth (Amaranthus pumilus)	Threatened
Reptiles	Hawksbill sea turtle (Eretmochelys imbricata)	Endangered
Reptiles	Leatherback sea turtle (Dermochelys coriacea)	Endangered
Reptiles	Green sea turtle (Chelonia mydas)	Threatened

Source: U.S. Fish and Wildlife Service, 2013

Unlike the threatened and endangered species listed in the USFWS and NYSDEC data, the information listed in *Table 34* is representative of species that have a documented occurrence within the study area. It is also important to note that most of these species were predominantly located in four separate sites, which have not been developed to the same extent as the majority of this study area.

Table 34. Threatened, Endangered, Special Concern, and Protected Species occurring Within the Sagtikos

Fascular Plant Sandplain Wild Flax (Linum intercursum) Threatened Fascular Plant Southern Yellow Flax (Linum medium var. texanum) Threatened Fascular Plant Shrubby St. John's-wort (Hypericum prolificum) Threatened Fascular Plant Orange Milkwort (Polygala lutea) Endangered Fascular Plant Whip Nutrush (Scleria triglomerata) Endangered Fascular Plant Flowering Pixiemoss (Pyxidanthera barbulata) Endangered Finvertebrate Animal Frosted Elfin (Callophrys irus) Threatened Fascular Plant Stargrass (Aletris farinosa) Threatened Fascular Plant Velvety Bush-clover (Lespedeza stuevei) Threatened
Vascular Plant Shrubby St. John's-wort (Hypericum prolificum) Threatened Vascular Plant Orange Milkwort (Polygala lutea) Endangered Vascular Plant Whip Nutrush (Scleria triglomerata) Endangered Vascular Plant Flowering Pixiemoss (Pyxidanthera barbulata) Endangered Vascular Plant Frosted Elfin (Callophrys irus) Threatened Vascular Plant Stargrass (Aletris farinosa) Threatened
Vascular Plant Orange Milkwort (Polygala lutea) Endangered Vascular Plant Whip Nutrush (Scleria triglomerata) Endangered Vascular Plant Flowering Pixiemoss (Pyxidanthera barbulata) Endangered Vascular Plant Frosted Elfin (Callophrys irus) Threatened Vascular Plant Stargrass (Aletris farinosa) Threatened
Vascular Plant Whip Nutrush (Scleria triglomerata) Endangered Vascular Plant Flowering Pixiemoss (Pyxidanthera barbulata) Endangered Vascular Plant Frosted Elfin (Callophrys irus) Threatened Vascular Plant Stargrass (Aletris farinosa) Threatened
Vascular Plant Flowering Pixiemoss (Pyxidanthera barbulata) Endangered Invertebrate Animal Frosted Elfin (Callophrys irus) Threatened Vascular Plant Stargrass (Aletris farinosa) Threatened
nvertebrate Animal Frosted Elfin (Callophrys irus) Threatened 'ascular Plant Stargrass (Aletris farinosa) Threatened
/ascular Plant Stargrass (Aletris farinosa) Threatened
/ascular Plant Velvety Bush-clover (Lespedeza stuevei) Threatened
nvertebrate Animal Coastal Barrens Buckmoth (Hemileuca maia sso.5) Special Concern
/ascular Plant Primrose-leaf Violet (Viola primulifolia) Threatened
/ascular Plant Narrow-leaved Bush-clover (Lespedeza angustifolia) Threatened
/ascular Plant Scirpus-like Rush (Juncus scirpoides) Endangered
/ascular Plant Comb-leaved Mermaid-weed (Proserpinaca pectinata) Threatened
/ascular Plant Large Grass-leaved Rush (Juncus biflorus) Endangered
/ascular Plant Northern Blazing-star (Liatris scariosa var. novae-angliae) Threatened
/ascular Plant Coastal Goldenrod (Solidago latissimifolia) Endangered
/ascular Plant Showy Aster (Eurybia spectabilis) Threatened
Vertebrate Animal Barn Owl (Tyto alba) Protected Bird
/ascular Plant American Ipecac (Euphorbia ipecacuanhae) Endangered



Air Quality

The U.S. Environmental Protection Agency (USEPA) uses National Ambient Air Quality Standards (NAAQS), established by the Clean Air Act Amendments of 1990, to classify all areas of the country as either attainment, non-attainment or unclassified. According to the EPA's 2008 Ground Level Ozone Standards – Region 2 Final Designations, April 2012, Suffolk County, located within EPA Region 2, is designated as a non-attainment area for ozone and particulate matter.

Suffolk County understands and recognizes the relationship between air quality and transportation, and is aware of the limits set by the NAAQS for air pollution (e.g., ozone, particulate matter, carbon monoxide, and nitrogen dioxide) in each region. This study is intended to identify areas where infrastructure improvements can be made to mitigate areas of congestion that occur within the study area, thus reducing pollution that is produced in this area and improving air quality for sensitive land uses (e.g., public open space, public parks, educational and health facilities, and residential buildings, etc.).

The New York State Department of Environmental Conservation (NYSDEC) is the agency responsible for implementing Federal and State air pollution control and monitoring programs. This is done in accord with a State Implementation Plan that identifies how air pollution control activities will be carried out to ensure that air containment levels are in compliance with NAAQS.

NYSDEC Region 1 currently monitors air quality at three stations in Suffolk County: Babylon (north of Republic Airport at 72 Gazza Blvd.); Holtsville (just north of the intersection of Nicolls Rd. and the LIE at 7 Division St.); and Riverhead (39 Sound Ave.). The Babylon and Holtsville monitoring stations are closest to the core of the study area. (The Babylon station is located 8.2 miles to the southeast of the Sagtikos Pkwy/ LIE intersection; the Holtsville station is located 12.1 miles to the east of this intersection.)

During 2012, sulfur dioxide (S02), inhalable particulate matter (PM2.5), and ozone (O3) were measured at the Holtsville station; at the Babylon station, PM2.5 and O3 were measured. Levels of O3 at Babylon and Holtsville were found to contravene the NAAQS.

Comprehensive information about the NYSDEC air quality program; the sampling technology employed; and current/historical constituent monitoring data collected at Babylon and Holtsville, interpreted in comparison with ambient air quality standards, can be found at: http://www.dec.ny.gov/chemical/8406.html.

Noise

Noise pollution comes from various sources, composed of sounds from both moving and stationary sources. Some sources are activities essential to the health, safety, and welfare of the town's inhabitants: noise from emergency vehicles sirens, from garbage collection operations, and from construction and maintenance equipment. Other noise sources, such as from rail and vehicle traffic, stem from the movement of people and goods, activities that are essential to the viability of an area as a place in which to live and do business. Although these and other noise-producing activities are necessary, the noise they produce can be undesirable for sensitive land use areas.

Given that the core of the study area contains a number of major roadways, which are heavily utilized by the public, it is assumed that the ambient noise environment within the area is primarily dominated by highway noise, produced by traffic. Each of the four towns that are included within the extended study area has noise ordinances incorporated into their Town Codes. These noise ordinances vary in how they control the abatement of noise from public roadways. Additional information regarding each of the towns' noise ordinances can be obtained at the following websites:

Babylon: http://ecode360.com/BA0924?needHash=true

Huntington: http://www.huntingtonny.gov/content/13753/13769/default.aspx
http://www.townofislip-ny.gov/e-services/town-code/town-code-basic

Smithtown: http://www.smithtownny.gov/index.aspx?NID=231

While this study is intended to identify areas where infrastructure improvements can be made to mitigate areas of congestion that occur within the study area, it is also assumed that by reducing traffic on many of these roadways there will also be a reduction in noise pollution.

Zoning

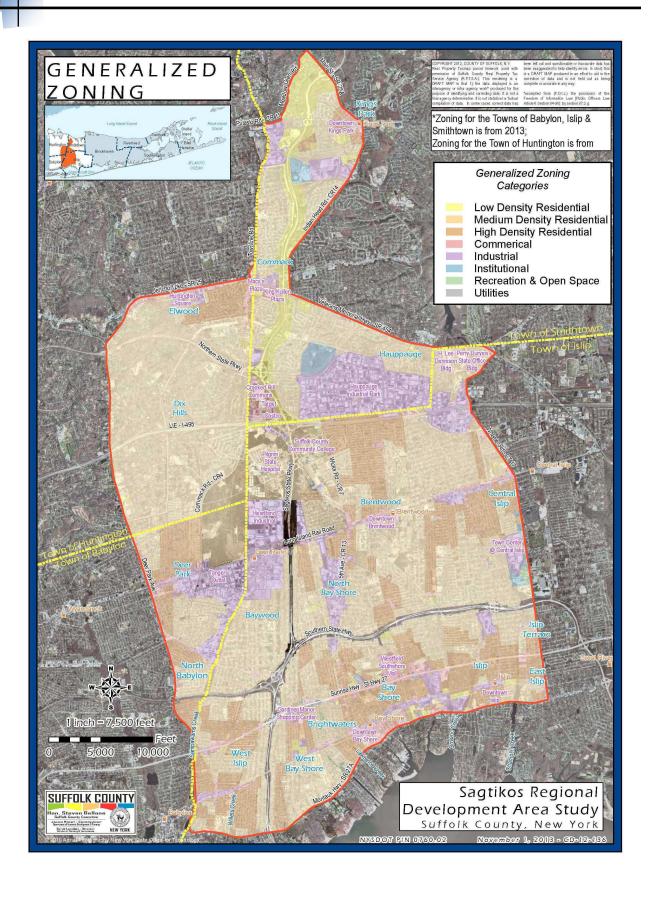
A map depicting the generalized zoning was created for the study area and can be found on the following page. This map summarizes the Town of Babylon, Islip, Huntington and Smithtown's zoning districts into eight generalized categories. These categories include: low, medium and high density residential, commercial, industrial, institutional, recreation/open space, and utilities. As indicated on the Generalized Zoning Map, the majority of the Study Area is zoned residential. The most common residential zoning is medium density residential (defined as 1 – 5 units per acre), followed by high density residential (defined as greater than 5 units per acre). The study area also contains large continuous areas of industrial zoning, most notably the Hauppauge Industrial Park and the Heartland Industrial area. The existing commercial zoning is generally located along east-west running road corridors including Montauk Highway (SR-27A), Sunrise Highway (SR-27), Suffolk Avenue (CR 100) and Jericho Turnpike (SR 25). There is also a large commercially zoned area in the Town of Smithtown known as Crooked Hill Commons. The four Towns in the study area have very little institutional, recreational/open space or utility zoned areas.

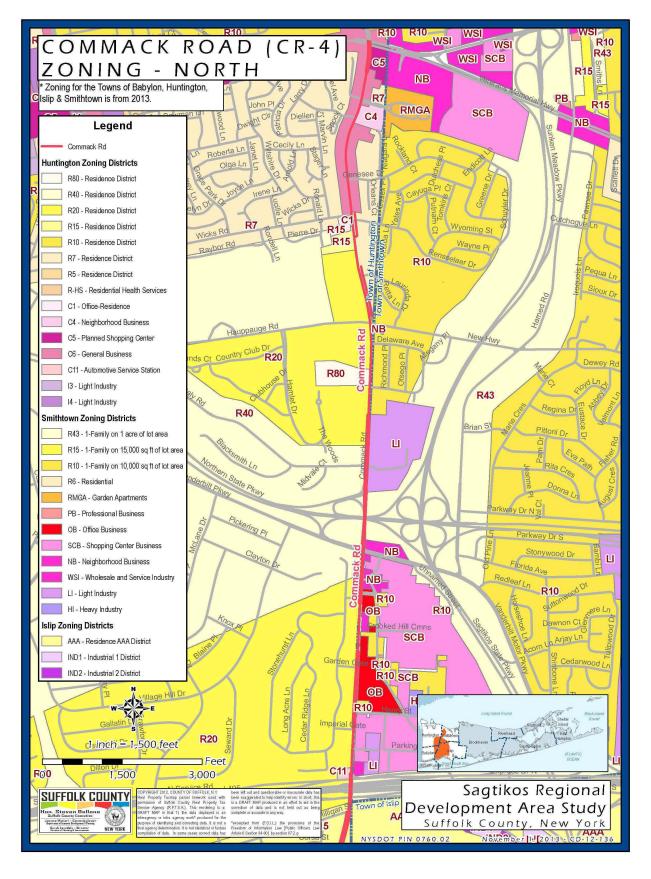
Commack Road (CR-4) Corridor Zoning

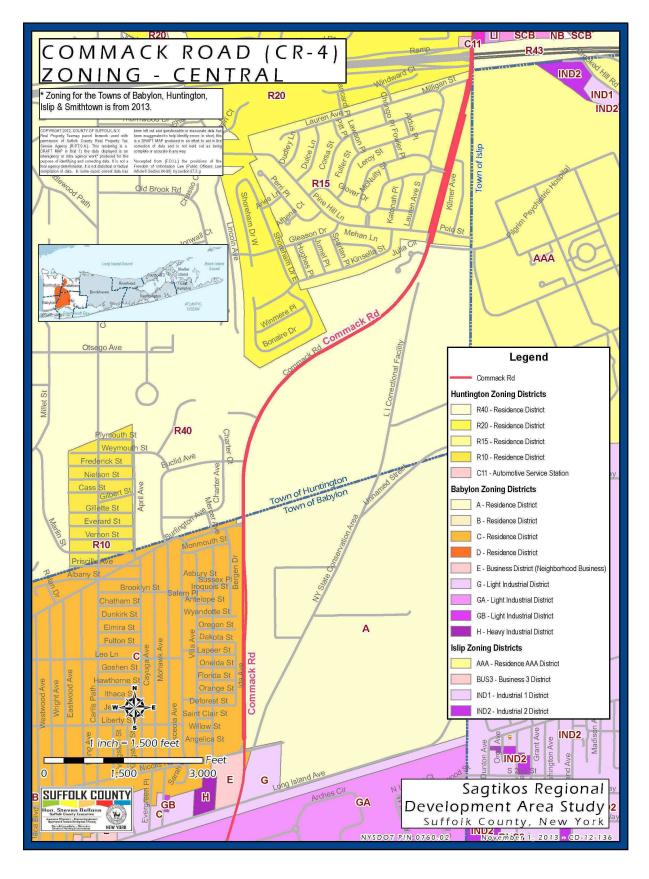
As shown by the three zoning maps on the following pages (Commack Road Zoning South, Central, and North), the majority of the land adjacent to Commack Road (CR-4) is zoned residential. The southern portion of this corridor is located in the Town of Babylon and is predominately zoned residential with an industrial zoned area around Grand Avenue. In the Town of Huntington the corridor continues to be zoned residential to the Long Island Expressway (I-495). North of the Long Island Expressway (I-495) the zoning pattern along the corridor becomes more variable. On the west side of the corridor the Town of Huntington's zoning transitions from medium density residential to higher density residential and commercial. On the east side of the corridor the Town of Smithtown's zoning transitions from commercial and industrial to residential and then back to commercial.

Crooked Hill Road (CR-13) Corridor Zoning

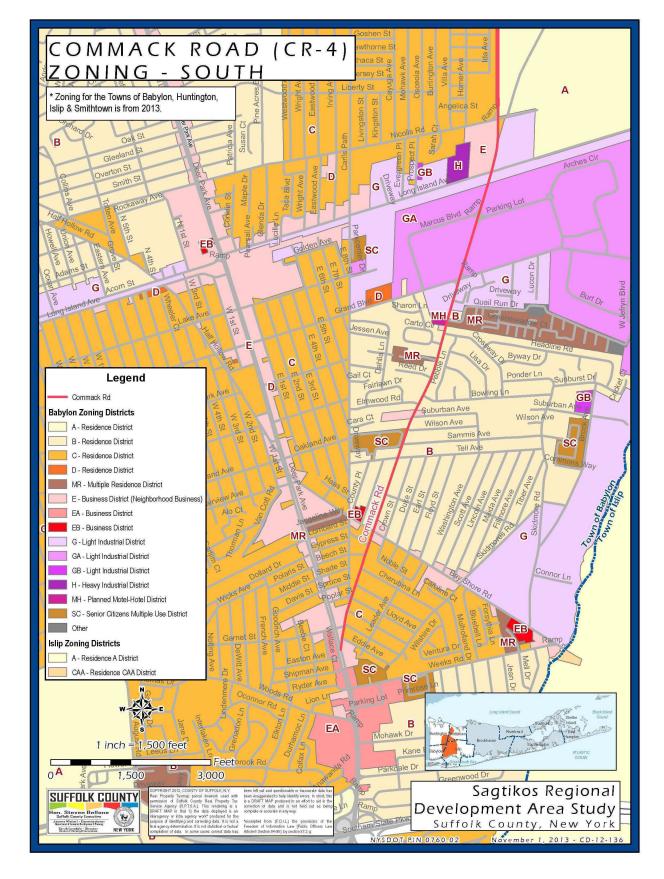
As shown by the zoning map on the following page (Crooked Hill Road Zoning), the majority











of the land adjacent to Crooked Hill Road (CR-13) is zoned residential. The Town of Islip has zoned the southern portion of the corridor medium density residential and the northern portion low density residential. As indicated on the Crooked Hill Road Zoning map there are also a few areas along the corridor that Islip has zoned industrial, business, or general services.

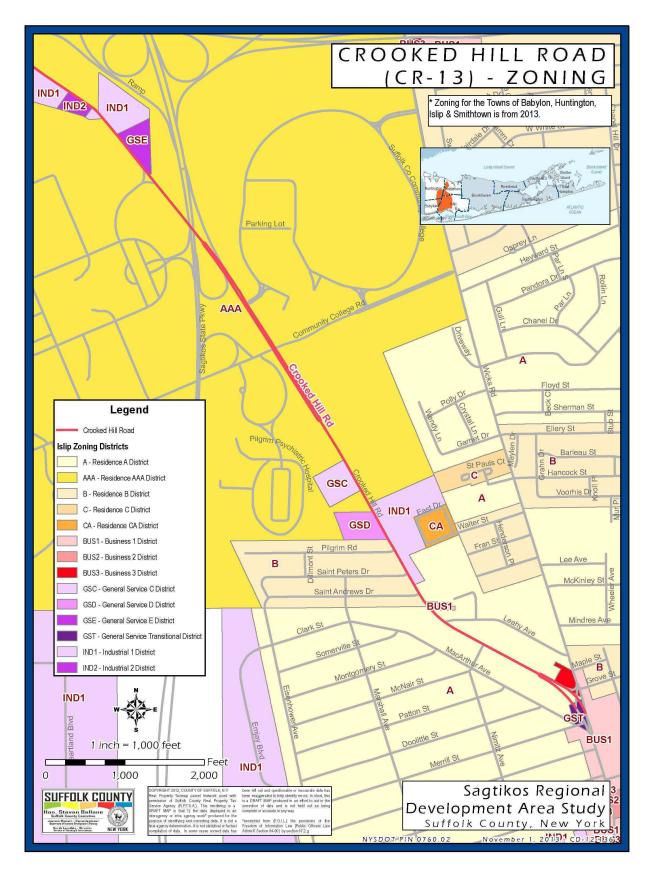
Walkability

An important land use consideration is how walkable a given location is for both residents and visitors. Walkable locations tend to have very different development patterns and economic profiles than non-walkable locations. A location's walkability also has important traffic implications. A walkable community significantly reduces the number of required automotive trips compared to a non-walkable community. In this way, a development pattern that yields a walkable community is an important traffic mitigation in itself.

To assess the walkability of different locations in the study area, a "Walk Score" analysis was completed for all of the study area's identified congestion mitigation locations. This analysis was done through the use of Walk Score, a web based public access walkability calculator (http://www.walkscore.com) which calculates walkability scores from 0 to 100 (where 100 is most walkable) for any address in the United States. The Walk Score calculator uses an algorithm that awards points based on the distance to the closest amenity (such as retail stores, restaurants, parks, schools, and theaters). A location receives maximum points if it is located within 0.25 miles of an identified amenity. The number of awarded points declines to zero as the distance to the amenity approaches 1 mile. Each identified amenity is weighted equally and the points are totaled and then normalized to yield a Walk Score. The Walk Score algorithm also accounts for population density and road metrics including block length and intersection density.

A range of Walk Score values were found for the study area's congestion mitigation locations. The highest Walk Score values were found near existing commercial centers such as the Tanger Outlets in Deer Park. Higher Walk Score values also tended to be located in the southern portion of the study area at locations closer to mixed use development such as downtown Brentwood and the Deer Park area. The lower Walk Score values were found at locations that did not have a mix of uses with different walkable amenities such as the locations around Pilgrim State Hospital and the Heartland Town Square site. It is important to note that these Walk Scores values are based on existing conditions and would change significantly as a result of new mixed use development that combines residential development, office space, retail development and parkland. Full descriptions of the Walk Score values for the different locations in the study area are provided in the Scenario Development chapter of this report.







Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

4- SCENARIO DEVELOPMENT: ALTERNATIVE APPROACHES (TASKS 4 AND 6)

SCENARIO DEVELOPMENT: ALTERNATIVE APPROACHES

Alternate scenarios consider infrastructure improvements and transportation management strategies with the goal of properly balancing development and environmental constraints. Information collected through the literature review process was used for the development of alternative scenarios. Transportation studies, development proposals, impact statements, and road projects were reviewed by the project team. The mitigation measures identified were summarized in detail and organized into a table. (See Table 35, Congestion Mitigations.)

For ease of discussion, four scenarios were created, separated by jurisdiction. The four scenarios are identified as follows:

- Baseline
- Scenario A County
- Scenario B State
- Scenario C Other

The significant difference between the baseline and the alternate scenarios is that in the alternate scenarios, the largest potential development (Heartland Town Square proposal) is developed into a mixed-use high density development of residential, office, and commercial space as currently proposed. In other words, the alternate scenarios assume that the Heartland Town Square change of zone is approved and the area is not developed "as-of-right" (pursuant to existing zoning).

Heartland Town Square is by far the largest development proposal in the study area. It is located on land which was formerly a portion of the Pilgrim State psychiatric facility. A portion of the original Pilgrim State Hospital that is owned and controlled by the New York State Office of Mental Health (OMH) remains in operation on approximately 200 acres. The Heartland Town Square development is proposed to be constructed on 452 acres surrounding Pilgrim State Hospital on three sides.

Building upon the data in the baseline, the development of Heartland Town Square is taken into consideration and is included in all three alternate scenarios. The Conceptual Master Plan for Heartland Town Square found in its Draft Environmental Impact Statement indicates that full build-out is proposed to be phased over 15 years.

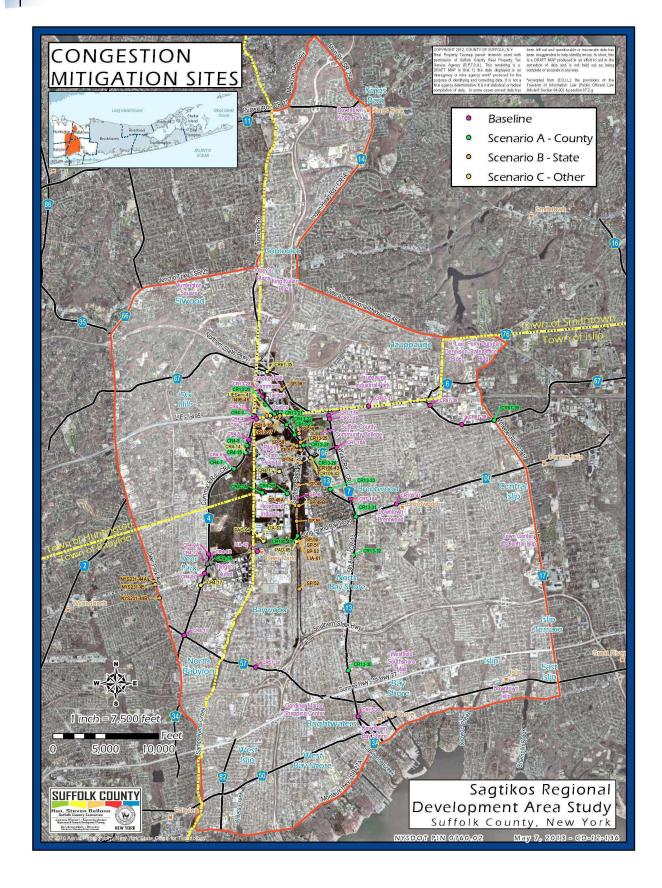
The proportions of the types of development in the phased build-out at Heartland Town Square (retail, residential units, office space, etc.) are described in the DEIS. However, further detailed analysis of the project by the Town of Islip has caused those proportions to continue to be adjusted. The DEIS states: "An important facet of the PSPRD (the Town's zoning designation for the project) is the ability to adapt specific development to market conditions, given the size of the property and the 15+- year build-out. Therefore, it must be understood that given the long-term build-out and the scope of development of Heartland Town Square, it is not possible to prepare and commit to precise site plans. Precise uses in any particular area would be dependent upon various factors, the most significant of which is market demand."

Therefore, for the purposes of this chapter pursuant to this the requirements of this study, alternative scenarios are divided by government jurisdiction. Each mitigation project has been preliminarily ranked

Large table 35

Large table Table 35

Large table Table 35



based upon its ability to manage growth, protect environmental resources, and minimize budgetary impacts within the study area.

Notwithstanding the above, an action scenario has been developed based on the anticipated Phase 1A component of the Heartland Town Square project as outlined in the Heartland Town Square DEIS². Henceforth called the "Preferred Scenario," this scenario filters some County congestion mitigation infrastructure investment projects from the table of Congestion Mitigations and presents them in a Suffolk County action plan that manages growth, protects environmental resources, and minimizes budgetary impacts (see chapter titled "Evaluation of Baseline and Alternative Scenarios").

Each mitigation project was evaluated as to whether it would be completed within a short-term or long-term time horizon. Short-term is defined here as 2015, 2016, and 2017. Long-term is defined as after 2017. Each mitigation measure has also been preliminarily evaluated based upon its ability to manage growth, protect environmental resources, and minimize budgetary impacts within the study area.

Baseline

The baseline scenario is defined as the existing conditions in the study area through 2014. The existing conditions include full build-out of the study area under the existing zoning in each of the four towns in the study area. The baseline scenario also includes development projects and traffic mitigation projects completed, near completion, or scheduled to be undertaken in the near future. It does not included development proposals that have yet to receive approval at the time of this writing.

The data in the literature review (Chapter 2) and the existing conditions (Chapter 3) constitute the baseline scenario. These chapters contain the data that characterize the traffic conditions on roadways in the study area. It is the working premise of this study that the baseline scenario is not the desired scenario and is described as the "do nothing alternative" in several environmental quality review analysis documents.

From Chapter 3 (Existing Conditions), the existing development was estimated to be the following:

Industrial development
 Office development
 Retail development
 Housing development
 102,858 units*

*Includes Census Designated Places that approximate the study area boundary.

Full build-out of the core of the Sagtikos Regional Development Area, under **existing zoning**, has been calculated to include the following **additional development**:

Potential Industrial development
 Potential Office development
 Potential Retail development
 Potential Housing development
 388 units

²As identified in the DEIS submitted to the Town of Islip for review, and referenced in the FEIS accepted by the Town of Islip in April 2014.

Full build-out of the Sagtikos Regional Development Area **outside the core**, under **existing zoning**, has been calculated to include the following **additional development:**

Pote	ntial Industrial development	3,406,400 SF
• Pote	ntial Office development	486,600 SF
• Pote	ntial Retail development	584,000 SF
• Pote	ntial Housing development	400 units

When the additional development inside and outside the core are added together, full build-out of the entire Sagtikos Regional Development Area under existing zoning, is estimated to include the following additional development:

•	Potential Industrial development	4,746,100 SF
•	Potential Office development	495,000 SF
•	Potential Retail development	705,900 SF
•	Potential Housing development	788 units

There are 18 congestion mitigation projects on six Suffolk County roadways and two state highways in the study area. The congestion mitigation measures associated with the baseline scenario are displayed on *Table* 36, Congestion Mitigations, Baseline, and the accompanying map, Congestion Mitigations - Baseline.

Transportation and Infrastructure Improvements

Recent Capital Projects (Completed)

The Suffolk County Department of Public Works (SCDPW) implements capital improvements along County highways through the planning of a Capital Program. Annually, the Department recommends projects for the following three years, as well as subsequent years. The SCDPW forwards the proposed Program to the County Executive and Suffolk County Legislature for review and, ultimately, adoption.

In recent years, SCDPW completed capital projects on numerous County roadways within the study area. In 2009, the SCDPW demolished an old concrete arch bridge over CR4 (Commack Rd) approximately 1,500 feet south of Julia Court in Dix Hills, Town of Huntington. That work facilitated the installation of sidewalk, highway resurfacing, new pavement markings, and traffic signal improvements in 2010 between Nicolls Road and Polo Street.

In 2007, work on CR 7 (Wicks Road) added lanes between Blue Jay Drive and CR 67 (Motor Parkway) and provided traffic signal improvements. The Department also added lanes on the Long Island Expressway South Service Road and on the Motor Parkway approaches to Wicks Road.

In 2010, all four legs of the intersection of CR100 (Suffolk Ave) and Brentwood Road were widened, allowing for more capacity with the addition of turn lanes on both Suffolk Avenue and Brentwood Road.

In 2011, the SCDPW began a reconstruction project on CR 57 (Bay Shore Road) between NYS RT 27 (Sunrise Highway) and NYS RT 231 (Deer Park Avenue), which included the addition of turn lanes at the existing intersection, complete signal rebuilds, a new exit ramp from the Southern State Parkway, and new

Table 36 Large



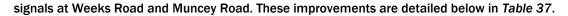


Table 37. Completed Suffolk County Capital Projects Since 2001

County Road	Letting Date	Project Name	Work Description
CR 4	12/11/2003	Reconstruction of CR 4 Julia Circle to LIE	Resurfacing new pavement markings.
CR 4	3/24/2009	Demolition of the Concrete Arch Bridge over CR4, Commack Road	Demolition of the Concrete Arch Bridge over CR4, Commack Road approx. 1500 LF south of Julia Court
CR4	8/13/2009	County Road 4, Commack Road from vicinity of Nicolls Rd to Vicinity of Polo St	Resurfacing and new pavement markings
CR 7	4/13/2006	Reconstruction of CR 7, Wicks Road, Phase I from Blue Jay to 700' N/O CR 67 Motor Parkway	Reconstructed CR 7, added second Southbound lane between LIE and Blue Jay. Add a northbound right turn lane from CR 7 to eastbound LIE South Service Rd. Widened the LIE South Service Rd west of CR 7 to add a right turn lane and thru Lane. Reconstructed CR 67 to add a westbound to Southbound left turn lane at CR 7. Rebuilt the signal at CR 7 and LIE South Service Rd and CR 7 at CR 67.
CR 7	12/8/2011	Improvements to CR 7, Wicks Road, Phase II from the vicinity of Blue Jay Dr to the vicinity of CR 13, Fifth Ave	Install continuous sidewalk on west side of CR 7, Wicks Rd, new drainage system to discharge to Town recharge basin on Williams Street, widen road at north entrance to college, signal rebuilds at CR 7 at Hancock St, CR 7 at Heyward, CR 7 at CR 106, CR 7 at College Access Road and New Signals At CR 7 at Leahy and CR 7 at Chapel Hill Dr. New Parking lane on eastside of CR 7 Between CR 106 and Blue Jay. Additional southbound lane on CR 7 between Blue Jay to Heyward Ave, new southbound to westbound right turn lane at CR 7 and College Access Rd
CR 13	8/18/2011	Intersection Improvements to CR 13, Fifth Avenue/ CR 13A, Clinton Avenue from the Vicinity of NYS Route 27A, Montauk Highway to the Vicinity of Spur Drive North, Town of Islip	Project included the addition of sidewalk on both sides of CR 13 where it did not exist, between NYS 27A and Spur Drive South. Addition of Pedestrian signals at all signals between CR 50 Union Ave and Spur Drive North. Addition of a right turn lanes at CR 13 and North and South Spur Drives.
CR 57	7/29/2010	Reconstruction of CR 57, Bay Shore Road, from NYS Route 27, Sunrise Hwy, to NYS Route 231, Deer Park Av	Reconstruction of CR 57, New Sidewalks and drainage, pavement markings and rebuild of all Signals between NYS 231 and NYS 27, not including state intersections, Capacity improvements were made at some intersections with additional lanes being added and New signal were installed at CR 57 at Weeks Rd, CR 57 at Muncey Rd, Howells Rd at SS PKWY W/B exit ramp
CR 67	3/1/2007	Public Health & Safety Improvements Fence CR 67, Motor Parkway from Redleaf La to Melwood Dr	Install guide-railing and fencing along the northerly edge of CR67 Motor Parkway and within the County Right-of - way Between Redleaf Lane and Melwood Dr
CR 67	7/9/2009	Reconstruction of CR 67, between LIE Exit 55 and CR 17, Wheeler Rd	Rehabilitation and Resurfacing of C.R. 67, Motor Parkway, from the vicinity of the L.I.E. South Service Road to C.R.17 Wheeler Road. Reconstruction of the signals at CR 67 and Calebs, and CR 17. Sidewalk was added to the north side of CR67.
CR 67	11/19/2009	CR 67 Bridge over the LIE at Exit 55	Reconstruction of CR 67 over the LIE to add lanes on CR 67. This included an additional left turn lanes and thru lanes in both eastbound and west bound directions. Reconstruction of the Signals at Kennedy Drive, Old Willets Rd and the North and South Service Rd. A right turn lane was added southbound at Old Willets.
CR 67	6/16/2011	Intersection improvement of CR 67 at Adams Av	Reconstructed CR 67, Motor Parkway westbound to include a westbound to northbound right turn lane and eastbound to include a second eastbound to northbound left turn lane. Widen Adams Ave to three southbound lanes.
CR 100	10/29/2009	Intersection Improvements on CR 100, Suffolk Avenue, @ Brentwood Road/Washington Avenue	Widened CR 100 to include an eastbound right turn lane and two westbound left turn lanes. Also widened Brentwood Rd to a left turn lane, through lane and a shared through/right lane in both the northbound and southbound directions.

Source: Suffolk County Department of Public Works

Current Capital Projects (Included in Baseline Scenario)

Starting in the autumn of 2012, the SCDPW reconstructed CR 7 (Wicks Road) between CR 13 (Fifth Avenue) and Blue Jay Drive. The project includes a continuous sidewalk along the west side of CR 7, new drainage infrastructure to discharge to a Town of Islip recharge basin on Williams Street, widening at the Suffolk County Community College's (SCCC) north entrance, and a new parking lane on the east side and an additional southbound lane on Wicks Road in the vicinity of the SCCC campus. The work includes new traffic signals at Leahy Avenue, Chapel Hill Drive, and the Brentwood North Middle School, as well.

Furthermore, the Department will rebuild the existing traffic signals at Hancock Street, Heyward Street, CR 106 (Community College Drive), and the aforementioned SCCC north entrance.

In 2012, the SCDPW began construction on CR 13 (Fifth Avenue) between NYS RT 27A, Montauk Highway, and Spur Drive North. This project involved the addition of sidewalk on both sides of CR 13 and the upgrade of the existing traffic signals to include all the necessary pedestrian facilities, including countdown pedestrian signals.

Also in 2012, at CR 67 and Adams Avenue, a reconstruction project widened Adams Avenue and Motor Parkway to accommodate additional turning lanes.

Scenario A - County

This scenario consists of Suffolk County Department of Public Works congestion mitigations proposed on Suffolk County Roads. Each mitigation project was evaluated as to whether it would be completed within a short-term or long-term time horizon.

There are 22 congestion mitigation projects proposed on four Suffolk County roadways in the study area. Most of the mitigation measures are short-term projects. The majority of the projects are concentrated on Commack Road (CR 4) and Crooked Hill Road (CR 13). The congestion mitigation measures associated County roadways are displayed on *Table 38*, Congestion Mitigations, Scenario A - County, and the accompanying map, Congestion Mitigations – Scenario A.

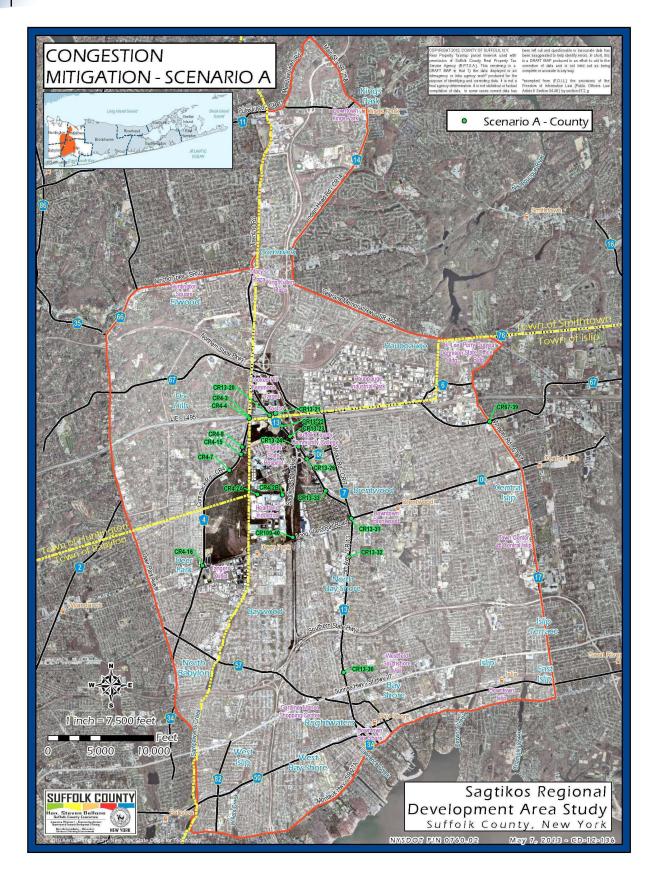
The purpose of the congestion mitigation projects by Suffolk County would be to relieve the growing traffic congestion pressure from the baseline build-out and from the anticipated development of Heartland Town Square.

Future Permit Projects

The SCDPW is also currently reviewing the impacts and required mitigation for the following projects within the study area:

• In 2013, a 132,000 square foot Lowe's store is being constructed at the site of the former Commack Multiplex Cinemas between CR 4 (Commack Road) and CR 13 (Crooked Hill Road), north

Table 38 large



- of the Long Island Expressway in Commack, Town of Smithtown.
- Ultimate Game Sports Complex, a 300,000 square foot complex at the southwest corner of CR 17 (Carleton Avenue) and DPW Drive in Central Islip, Town of Islip.
- 144 room Sheraton Hotel on the north side of CR 67 (Motor Parkway), east of CR 7 (Wicks Road) in Hauppauge, Town of Smithtown.
- Office Building on the south side of CR 100 (Suffolk Avenue), west of SR 111 (Islip Avenue), in Brentwood, Town of Islip.

Additionally, the following development has been proposed within the study area which may require mitigations on County roads:

• Engel Burman Apartments, 240 unit apartment complex north of CR 100 (Suffolk Avenue), west of Eastern Avenue in Brentwood, Town of Islip.

Future Capital Projects

The SCDPW has programmed the construction of a new pedestrian bridge over CR4 (Commack Road) approximately 1,500 feet south of Julia Court, within the limits of the Edgewood Preserve. Currently, there is no estimated date of completion.

In 2013, the Department is constructing an area for the Motor Carrier Unit of the Suffolk County Police Department to conduct inspections of area trucks. The site is on CR13 (Crooked Hill Road) approximately 300 feet south of the signalized driveway to the PJ Venture shopping center, also known as Robert Street.

In 2013, the department is commencing several resurfacing projects within the study limits: on CR 13 between Brooke Avenue and the Southern State Parkway, on CR 17 between Smith Street and CR 100 and on CR 57 under the Sunrise Highway overpass.

In early 2014, the SCDPW will let an improvement to CR 13, Crooked Hill Road project between CR 7 and CR 106. This project will involve resurfacing, new pavement marking, and signal improvements.

Details about future Suffolk County capital road projects can be found in *Table 39*.

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Table 39. Future Suffolk County Capital Projects

County Road	Capital Project Number	Letting/ Work Order Date	Project Name	Work Description
CR 4	5560	unknown	Construction of Pedestrian Bridge over CR4 Commack Road	
CR 13	5538	Early 2014	Improvements to CR13, Crooked Hill Road From CR 7, Wicks Road to the Vicinity of CR 106, Campus Road	Resurfacing and new pavement markings
CR 13	5014	2013	CR13, Crooked Hill Road from Brooke Avenue to Southern State Parkway	Resurfacing and new pavement markings
CR 13	5532	unknown	CR 13, Fifth Ave at CR 100, Suffolk Ave, Brentwood LKB	Transportation Demand Management Study. Consideration of using surface streets south of CR 100 to divert westbound to southbound left turns from the intersection of CR 13 and CR 100.
CR 13	5140	11/29/2012	Construction of the Motor Carrier Unit Parking Lot on CR13, Crooked Hill Road Approx. 300 ft. South of Roberts St	To provide an area for SCPD to use as needed for inspection of Trucks
CR 13	5538	2020	CR 13, Fifth Ave at Candle- wood Rd	Preferred alternative still needs to be determined. Property Acquisitions maybe required
CR 17	5097	2017	Intersection Improvements at CR 17, Wheeler Road, at CR 67, Motor Parkway	Preferred alternative still needs to be determined. Property Acquisitions maybe required
CR 17	5014	2013	CR 17, Carleton Ave From Smith St to CR 100, Suffolk Ave	Resurfacing and new pavement markings
CR 57	5014	2013	CR, 57 Howells Rd under NYS 27, Sunrise Hwy	Resurfacing and new pavement markings
I-495 Ser- vice Road	5599	unknown	Rehabilitation of I-496 LIE Services Road from the vicin- ity of NYS Rte.231 to CR13, Crooked Hill Road	Resurfacing and new pavement markings
-	5565	unknown	Interim Sagtikos Corridor Truck Route Evaluation	Design an alternative route parallel to the Sagtikos Parkway primarily for trucks to access Pilgrim State Hospital

Source: Suffolk County Department of Public Works

Environmental Considerations

An important environmental consideration related to the identified Scenario A mitigations is the ability of the individual mitigations to reduce congestion. A reduction in congestion will play a significant role in reducing energy consumption and air pollution. The Scenario A traffic mitigations are proposed on four County Roads: Commack Road (CR 4), Crooked Hill Road (CR 13), Motor Parkway (CR 67), and Suffolk Avenue (CR 100). These four County Roads, which have a functional classification of Urban Minor Arterial, connect and augment the principal arterial roadways (e.g. Sagtikos Parkway, Long Island Expressway) in the study area.

As outlined in the Environmental Conditions Section of this study, there are various environmental conditions in the study area that have the potential to play an important role in shaping the development pattern in a given location. Therefore, it is critical to identify locations where environmental conditions may impact the planned congestion mitigations. In Scenario A the majority of the identified construction mitigations are not located in or adjacent to environmentally sensitive areas such as the Long Island Sound Study Watershed, the South Shore Estuary Reserve Watershed, river/stream corridors, NYS Freshwater Wetlands, or designated open space and parkland.

However, some of the identified Scenario A mitigations are adjacent to open space/parkland. The identified mitigation to add signalized access at Commack Road and the Pilgrim State access (Mitigation CR 4-15) is located adjacent to the Oak Brush Plans State Preserve at Edgewood (Edgewood Preserve). Also, the proposed construction of a new pedestrian bridge across Commack Road approximately 1,500 feet south of Julia Court (Mitigation CR 4-7) would be partially constructed within the limits of the Edgewood Preserve. In addition, the proposed mitigation to increase the width of Commack Road under the LIE (Mitigation CR 4-3), and the proposed mitigation to add through lanes and turning lanes to the LIE Service Road on the eastbound approach to Commack Road (Mitigation CR 4-4) are adjacent to a relatively small Town of Huntington open space/parkland parcel. One proposed mitigation on Crooked Hill Road, in which left turn lanes are added at the Campus Road intersection (Mitigation CR 13-26), is also adjacent to New York State parkland.

Two Scenario A mitigations located on Crooked Hill Road are located in the South Shore Estuary Reserve Watershed. These mitigations include a proposed resurfacing project on Crooked Hill Road from Brook Avenue to the Southern State Parkway (Mitigation CR 13-30) and a proposed mitigation at Crooked Hill Road at Candlewood Road (Mitigation CR 13-32).

Scenario B - State

This scenario consists of New York State Department of Transportation congestion mitigations proposed on New York State roads. Each mitigation project was evaluated as to whether it would be completed within a short-term or long-term time horizon.

There are 20 congestion mitigation projects proposed on three New York State roadways in the study area. Three of those projects would involve Suffolk County or local roads. Only one of the mitigation measures is listed as a short-term project. The majority of the projects are concentrated on Sagtikos Parkway. The congestion mitigation measures associated State roadways are displayed on Table 40, Congestion

Table 40 large



Mitigations, Scenario B - State, and the accompanying map, Congestion Mitigations - Scenario B.

Additionally, the following development has been proposed within the study area which may require mitigations on State roads:

- A 140,000 square foot Costco retail store, south of SR 27 (Sunrise Highway) west of Denver Avenue in Bay Shore, Town of Islip.
- In Brentwood in the Town of Islip, the New York State Department of Transportation has proposed redeveloping 120 acres owned by New York State south of Pilgrim State Hospital for use as an intermodal freight hub. At this site, trains would move freight cars into the proposed yard via a refurbished rail spur off the main line of the LIRR just east of the Deer Park railroad station. The cargo would be unloaded from freight cars and transferred to trucks for delivery on Long Island.

Environmental Considerations

The Scenario B traffic mitigations have the ability to significantly reduce traffic congestion, air pollution, and energy consumption in the study area. This reduction in traffic would be especially important due to the significance of the roadways impacted. The Scenario B traffic mitigations are proposed on three State roads: Deer Park Avenue (NYS 231), the Long Island Expressway (I-495) and Sagtikos Parkway. Both I-495 and the Sagtikos Parkway have functional classification as Principal Arterial Roads. Traffic Mitigations are also proposed on two County roads - Crooked Hill Road (CR 13), Campus Road/Community College Road (CR 106) and one Town road - Long Island Avenue. Crooked Hill Road, Long Island Avenue, as well as Deer Park Avenue are classified as Minor Arterial roads, which connect and augment the Principal Arterial Roadways.

The majority of the identified Scenario B construction mitigations are not located in or adjacent to environmentally sensitive areas such as the Long Island Sound Study Watershed, the South Shore Estuary Reserve Watershed, river/stream corridors, NYS Freshwater Wetlands, or designated open space and parkland.

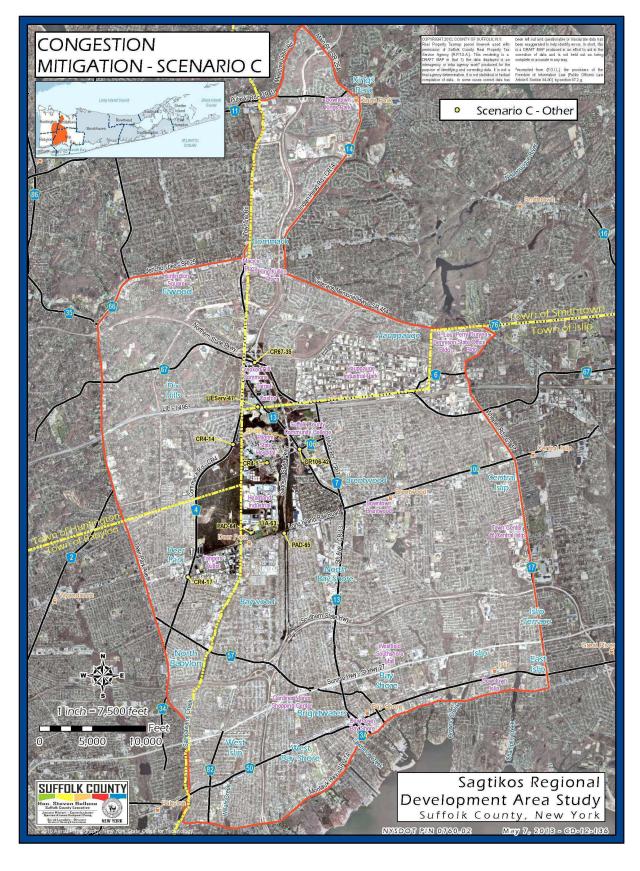
It should be noted that one of the identified Scenario B mitigations is adjacent to open space/parkland. This identified mitigation, which would provide additional access to and from southbound Sagtikos Parkway (Mitigation CR 106-43), is located adjacent to New York State parkland.

In addition, Six Scenario B mitigations are located in the South Shore Estuary Reserve Watershed. These mitigations include: Mitigation LIA -61 - construction of a partial or full interchange on the Sagtikos Parkway at Long Island Avenue, Mitigation SP-52 - construction of new lanes on Sagtikos Parkway with off ramp added at Pine Aire Drive, Mitigation SP-50 - added access to Sagtikos Parkway at Long Island Avenue and Suffolk Avenue, Mitigation SP-51 - the addition of a third lane in both directions on the Sagtikos Parkway, Mitigation SP-53 - construction of an overpass and diamond interchange at G Road and Sagtikos Parkway, and Mitigation NYS 231-45 - reconfiguration of intersection of Long Island Avenue at Deer Park Avenue.

Scenario C - Other

This scenario consists of congestion mitigations found in the literature research that are proposed on local

Table 41 large





roads or on land not controlled by any transportation agency. Each mitigation project was evaluated as to whether it would be completed within a short-term or long-term time horizon.

There are nine congestion mitigation projects proposed on local roads or on land not controlled by any transportation agency. Most of them (six) are categorized as long-term. Many of these congestion mitigation projects are internal driveway connections or pass-through connections between land uses. Some of them are recommendations for intersection improvements on local roads.

The congestion mitigation measures associated other roadways are displayed on *Table 41*, Congestion Mitigations, Scenario C - Other, and the accompanying map, Congestion Mitigations - Scenario C.

Environmental Considerations

The Scenario C traffic mitigations are proposed on six roads: Commack Road (CR -4), Motor Parkway (CR-67), Campus Road/Community College Road (CR - 106), LIE South Service Road, Long Island Avenue, and Pine Aire Drive. The Long Island Expressway Service Road is classified as a Principal Arterial Roadway while Commack Road, Long island Avenue, Pine Aire Drive, and Motor Parkway are classified as Minor Arterial Roadways.

The majority of the Scenario C construction mitigations are not located in or adjacent to environmentally sensitive areas such as the Long Island Sound Study Watershed, the South Shore Estuary Reserve Watershed, river/stream corridors, NYS Freshwater Wetlands, or designated open space and parkland.

It should be noted that some of the identified Scenario C mitigation are adjacent to open space/parkland. The proposed mitigation to add a card-activated access gate on Commack Rd (CR-4-14) is adjacent to the Oak Brush Plans State Preserve at Edgewood (Edgewood Preserve). In addition, the proposed addition of a signaled intersection and access to the proposed development site east of the Sagtikos on Campus Road/Community College Road (CR 106-42) is located adjacent to New York State Parkland.

One Scenario C mitigation, the intersection improvements on Commack Road at Grand Avenue (Mitigation CR 4-17), is located on the border of the South Shore Estuary Reserve Watershed. The construction of an eastbound right turn lane on the approach to the southbound Sagtikos Parkway Ramp (Mitigation PAD-65) is also located on the border of the South Shore Estuary Reserve Watershed.

Short-Term

Within the study area, there are a total of 12 congestion mitigations that are classified as short-term. These mitigations are proposed on five roadways: three Suffolk County Roads (CR 4, CR 13, and CR 106), one New York State road (NYS 231), and one local road (Long Island Avenue). The predominant agency is Suffolk County with 11 congestion mitigation projects. New York State has one short-term project on NYS Route 231. Other entities have the remaining three mitigation projects.

The congestion mitigation measures that are short-term are displayed on Table 42, Congestion Mitigations, Short-Term.

Table 42large

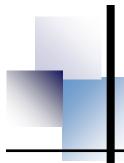


Within the study area, there are a total of 39 congestion mitigations that are classified as long-term. These mitigations are proposed on 10 distinct roadways: five Suffolk County Roads (CR 4, CR 13, CR 67, CR 100, and CR 106), three New York State roads (NYS 231, NYS I-495, and Sagtikos Parkway), and two local roads (Long Island Avenue and Pine Aire Drive). The predominant agency is Suffolk County with 21 projects, followed by New York State with 15 congestion mitigation projects. Other entities have the remaining three mitigation projects.

The congestion mitigation measures that are long-term are displayed on *Table 43*, Congestion Mitigations, Long-Term.

Table 43 large

Table 43



Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

5-EVALUATION OF BASELINE AND ALTERNATIVE SCENARIOS (TASKS7)

EVALUATION OF BASELINE AND ALTERNATIVE SCENARIOS

Rating of Alternative Scenarios - Technical Analysis Tool

The technical analysis tool utilized for the rating of the alternative scenarios identifies key measures against which each alternative congestion mitigation is evaluated in a comparison table format. The tables also include a "Harvey Ball" representation. Harvey Balls are round ideograms, similar to what is used in the Consumer Reports evaluations, used as a visualization tool to display qualitative information. In this report, the balls are used at the end of the comparison tables to indicate the degree to which particular congestions mitigation meet a particular performance measure and evaluation criterion. Harvey Balls are used in this way to summarize the information in the comparison tables.

Information in the comparison table is categorized into three evaluation criteria for each of the congestion mitigations:

- 1. Ability to manage growth
- 2. Ability to protect environmental resources, and
- 3. Ability to minimize budgetary impacts.

Three performance measures for each of the three evaluation criteria were used. For each performance measure there is a grade of 5 (the highest) to 1 (the lowest). The grades are averaged across the evaluation criterion and a representative Harvey Ball is attributed to the proposed congestion mitigation.

Ability to Manage Growth Evaluation Criteria includes: a) Capacity Improvements b) Proximity to Development Areas (including vacant land, underutilized development sites, brownfields and innovation zones) and c) Consistency with Comprehensive Plans. The ability to manage growth is derived from analysis of collected data and a review of key representations of development parameters such as existing land use, zoning, local and regional plans, roadway infrastructure and patterns, projected development of key areas and consultation with Suffolk County Department of Public Works staff. Congestion mitigations are examined and compared to existing local comprehensive plans and regional land use and growth and development studies.

The rating system for the Capacity Improvements is as follows:

- 5 = Proposed congestion mitigation involves corridor (length of roadway) capacity improvements that include roadway and intersection widening and reconstruction with the addition of new travel lanes.
- 4 = Proposed congestion mitigation involves intersection specific improvements that include the addition of new lanes, upgrade an existing signal or the addition of a new signal, and additional travel lanes at an existing unsignalized intersection.
- 3 = Proposed congestion mitigation involves the upgrading of an existing unsignalized intersection to a signalized intersection without adding additional travel lanes.
- 2 = Proposed congestion mitigation involves new signal timings along a system of signals or at a standalone intersection.
- **1** = Proposed congestion mitigation may involve resurfacing of an existing length of roadway or at a specific intersection or new pavement markings; this improvement would not provide any capacity improvements.

The rating system for Proximity to Development Areas is as follows:

- 5 = Proposed congestion mitigation is immediately proximate to the Heartland Town Square Phase 1A.
- 4= Proposed congestion mitigation is proximate to Heartland Town Square or Hauppauge Industrial Park.
- 3 = Proposed congestion mitigation is proximate to other industrial development areas.
- 2 = Proposed congestion mitigation is proximate to other commercial development areas.
- 1 = Proposed congestion mitigation is not proximate to any industrial or commercial area.

The rating system for Consistency with Comprehensive Plans is as follows:

- 5 = Proposed congestion mitigation is consistent with a local comprehensive or hamlet plan.
- 4 = Proposed congestion mitigation correlates to the Suffolk County Department of Planning study titled A Review of Selected Growth and Development Areas, Suffolk County, New York (2006)
- 3 = Proposed congestion mitigation slightly correlates to the Suffolk County Department of Planning study titled A Review of Selected Growth and Development Areas, Suffolk County, New York (2006)
- 2 = Proposed congestion mitigation addresses a local congestion issue.
- 1 = Proposed congestion mitigation has no correlation to any documented planning initiative.

Ability to Protect Environmental Resources Evaluation Criteria includes: a) Linear Feet along Open Space/Parkland, b) Increase in Impermeable Surfaces, and c) Ability to Remediate Storm Water Runoff. The ability to protect environmental resources is evaluated based on an analysis of collected data and a review of key graphic representations of estuary boundaries, streams, water bodies and wetlands, open space and parks. All mitigations are anticipated to reduce congestion and therefore motor vehicle idle time and thus, reduce tailpipe emissions adversely affecting the environment. Some of the congestion mitigations have the ability to remediate storm water runoff via structural catchment systems or other best management practices.

The rating system for Linear Feet along Open Space/Parkland is as follows:

- 5 = Proposed congestion mitigation has no proximity to open space and parkland.
- 4 = Proposed congestion mitigation is in proximity to open space and parkland.
- 3 = Proposed congestion mitigation has only a small point of contact with open space and parkland.
- 2 = Proposed congestion mitigation has minimal frontage on open space and parkland.
- 1 = Proposed congestion mitigation has significant frontage on open space and parkland.

The rating system for Increase in Impermeable Surfaces is as follows:

- 5 = Proposed congestion mitigation includes no impermeable surface area.
- 4 = Proposed congestion mitigation includes minimal impermeable surface area.
- 3 = Proposed congestion mitigation includes a moderate amount of impermeable surface area.
- 2 = Proposed congestion mitigation includes a significant amount of impermeable surface area.
- 1 = Proposed congestion mitigation includes a substantial amount of impermeable surface area.

The rating system for the Ability to Remediate Storm Water Runoff through structures or other methods is as follows:

- 5 = Proposed congestion mitigation has a substantial ability to remediate storm water runoff.
- 4 = Proposed congestion mitigation has a significant ability to remediate storm water runoff.
- 3 = Proposed congestion mitigation has a moderate ability to remediate storm water runoff.
- 2 = Proposed congestion mitigation has minimal ability to remediate storm water runoff.
- 1 = Proposed congestion mitigation has no ability to remediate storm water runoff.

Ability to Minimize Budgetary Impacts includes: a) Reciprocal Funding, b) Value Capture, and c) Long Term Maintenance. The ability to minimize budgetary impacts is evaluated based on an analysis of collected data, potential grant funding, maintenance estimates, and a review of key economic parameters associated with the Sagtikos Regional Development Area (including estimated property tax, sales tax, and return on investment).

The rating system for Reciprocal Funding (funding to Suffolk County from outside sources) is as follows:

- 5 = Proposed congestion mitigation includes 100% funding from other than Suffolk County.
- 4 = Proposed congestion mitigation includes 60% or greater funding from other than Suffolk County.
- 3 = Proposed congestion mitigation includes 50% or greater funding from other than Suffolk County.
- 2 = Proposed congestion mitigation includes 40% or less funding from other than Suffolk County.
- 1 = Proposed congestion mitigation includes 0% funding from other than Suffolk County.

The rating system for Value Capture Mechanism is as follows:

The Suffolk County Department of Economic Development and Planning has performed an economic impact analysis of the proposed development Heartland Town Square, most of which is dependent on roadway and traffic mitigation improvements performed by Suffolk County. Specifically, Phase 1A of the Heartland project, which assumes a four year build-out of 308,200 square feet of office space, 488,100 square feet of retail space, 85,500 square feet of civic space, and 1,225 residential units averaging 1,000 square feet, would generate revenue returns to state and local governmental entities. By the fourth year of construction the analysis estimates that total sales tax generated annually would be approximately \$17.9 million, \$9.6 million of which would be paid to Suffolk County (and the rest would go to New York State). Annual property taxes generated from this development would total \$2.7 million, \$515,077 of which would be paid to Suffolk County.

When determining the "value capture" (or revenue generated from infrastructure improvements) related to transportation mitigation projects in support of the Heartland Town Square development, it is important to note that not all improvements will have an equal impact on tax revenue. Some of the mitigations are rather minor while others are quite significant. The Suffolk County Department of Public Works has provided several standards by which to measure how much a particular mitigation measure will help mitigate traffic. The standards are described below, where a 5 on the scale is considered the most helpful while 1 is considered the least:

- 5 = Proposed improvements involve corridor (length of roadway) capacity improvements, which includes roadway and intersection widening and reconstruction with the addition of new travel lanes.
- 4 = Proposed improvements involve intersection specific improvements, which include the addition of new lanes, rebuilding of an existing signal or the addition of a new signal, and additional travel lanes at an



- 3 = Proposed improvements involve the upgrading of an existing unsignalized intersection to a signalized intersection without adding additional travel lanes.
- 2 = Proposed improvements involve new signal timings along a system of signals or at a stand-alone intersection.
- 1 = Proposed improvements may involve resurfacing of an existing length of roadway or at a specific intersection or just new pavement markings; this improvement would not provide any capacity improvements.

Using these standards, this analysis calculates the estimated percentage for each mitigation measure of total average annual daily traffic counts. Average annual daily traffic counts for each segment of roadway improvement is estimated from data provided by the Suffolk County Department of Public Works. The ranking of capacity improvements in the technical analysis tool is used as a guide (i.e. a rating of "5" is estimated to reduce annual traffic counts by 10 percent, a rating of "4" by 6 percent, a rating of "3" by 4 percent, a rating of "2" by 3 percent, and a rating of 1 by one-tenth percent). It then takes that percentage and applies it to the value in terms of property tax and sales tax that will be returned to the County for a particular mitigation measure over a 5 year period (the average for road or highway improvements before they need extensive maintenance.) As shown on the table below, on an \$18.9 million initial investment in roadway improvements, the cumulative 5 year impact on County revenues generated is an estimated \$31.7 million, or a 67.5 percent average return (or "value capture"). The performance measures are then generated by assuming that a 5 year return on investment that is a 0 percent return or less is a "1", any return between 1 and 100 percent is a "2", any return between 101 and 500 percent is a "3", any return between 501 percent and 1,000 percent is a "4", and anything above a 1,000 percent return is a "5".



						Est. Property Tax	Est. Sales Tax	*Value Capture*	Percent	
			Est. Average			Over 5 Years from Date of	Over 5 Years from Date of	Net 5 Year Revenue	Returnion	
		Est.	Annual Daily	Est. Potential	Percent of	Constructions from Sagtikos	Constructions from Sagtikos	Gain/Loss from	Mitgation	Value
Mitigation	Mapt	Mitigation	Traffic (AADT)	AAD1	Total AADT	Development Dependent on	Development Dependent on	Traffic Mitigation	Investment	Capture
Construction of new pedestrian bridge, approximately		Cast	2011	Mitigation	Mitigation	County Traffic Mitigation Measures	County Traffic Mitigation Measures	Measure	Over 5 years	Performance
1,500 ft. south of Julia Court within limits of Edgwood Preserve	CR 4-7	\$100,000	27,500	275	2.0	\$50,879	\$948,276	\$899,155	799.2	:
Reconstruct Commack Rd. to a five lane section from the LIE to										
Fish Path/Pilgrim State Access	CR 4-8	\$5,000,000	27,500	2,750	19.8	\$508,787	\$9,482,759	\$4,991,545	-0.2	!
Addisignalized access at Commack Rd. and Pilgrim State access/										
Fish Path	CR 4-15	\$1,500,000	27,500	1,650	11.9	\$305,272	\$5,689,65\$	\$4,494,927	199.7	
Intersection Improvements at Long Island Avenue	CR 4-16	\$1,500,000	27,400	1,644	11.8	\$304,162	\$5,668,966	\$4,473,127	198.2	
Re-Stripe Crooked Hill Rd. under the LIE to provide two northbound										
left turn lanes	CR 13-20	\$9,000	15,800	948	6.8	\$175,393	\$3,268,966	\$3,435,358	38,070.6	
At LIE North Service Rd.; reconstruct westbound approach [three lanes]	CR 13-21	\$700,000	15,800	948	6.8	\$175,393	\$3,268,966	\$2,744,358	292.1	
Widening to four through lanes plus turn lanes between LIE and Campus										
Rd., CR 106	CR 13-22	\$4,500,000	18,300	1,830	13.1	\$338,574	\$6,310,345	\$2,148,919	-52.2	!
Existing Pilgrim intersection will be reconstructed and a traffic signal										
installed. Eastbound approach will be expanded	CR 13-23	\$1,500,000	15,500	930	6.7	\$172,062	\$3,206,897	\$1,878,959	25.3	1
At Community College Drive, CR 106, add second left turn lane northbound	;									
add second left turn lane westbound; Add secon eastbound left turn										
laine; Reconstruct intersection	CR 13-26	\$3,500,000	15,500	930	6.7	\$172,062	\$3,206,897	-\$121,041	-103.5	
CR 13, Crooked Hill Road from Brook Ave. to Southern State Parkway,										
resurfacing and new pavement markings	CR 13-30	\$500,000	15,500	465	3.3	\$86,031	\$1,603,448	\$1,189,479	137.9	
Improvements to CR 13, Crooked Hill Road from CR 7, Wicks Road to the										
Vicinity of CR 106, Campus Road, resurfacing, signal reconstruction		\$100,000	15,500	1,550	11.1	\$286,771	\$5,344,828	\$5,531,598	5,431.6	
Intersection reconstruction at G-Road and Sagtikos State Parkway exit										
ramp Note: this mitigation will be a component of the project identified										
by Map #CR 13-22	CR 106-66	NA.	NA.							
1otal		\$18,909,000	221,800	13,920	100.0	\$2,575,385	\$48,000,000	\$31,666,385	67.5	

The rating system for Long Term Maintenance is as follows:

- **5 = Proposed congestion mitigation has no long term maintenance cost.**
- 4 = Proposed congestion mitigation has a minimal long term maintenance cost.
- 3 = Proposed congestion mitigation has a moderate long term maintenance cost.
- 2 = Proposed congestion mitigation has a significant long term maintenance cost
- 1 = Proposed congestion mitigation has a substantial long term maintenance cost.

Use of the Technical Analysis Tool – Nine performance measures are utilized to further define the evaluation criteria. None of the performance measures have been given a weighted consideration within the evaluation criteria. Moreover, the evaluation criteria have not been weighted. For example, the consideration as to whether the ability to manage growth outweighs all other considerations such as minimizing budgetary impacts is not further pondered and is considered equal for this round of the evaluation.

Selections of the performance measures for the evaluation criteria are considered good indicators within the criteria. However, others measures might eventually be considered. Evaluation criteria can be defined by the use of only two of the performance measures shown or by adding additional measures.

A refinement of the technical analysis tool to study the congestion mitigations may be appropriate as later phases of Heartland Town Square develop.

The following is a representation of the technical analysis tool. Construction mitigations can be represented individually for evaluation or clustered in groups. The technical analysis tools for the purposes of this Study have been grouped by scenario

	le chnical															
Sagtikos R	Regional I)ev	elopmei	ıt Are	a S	tudy										
					E	valuation	Crite	ria								
		-	Abilit Manage (Growth		Environ		l Res	ourc	es	Βι	ıdge	tary	vlinimize v Impacts		
			erformance	Measu	re		manc							e Measure	ļ.,	
		1. Capacity Improvements	2. Proximity to Development Areas (Innovation Zones)	3. Consistency with Comp. Plans	Average Sub-score*	Linear Feet along open space/parkland (zone of disturbance)	 Increase in impermeable surface 	waterrunoff	3. Ability to remediate	Average Sub-score*	1. Reciprocal Funding	Value Capture	3. Long Term Maintenance	Average Sub-score*	Total Average Score*	
Mitigation	Map #	R.											6			
		-						* 1	Taka	A	0			rounded		
	-							1	1016	1461	rec :	2016				
	-													Key		
														5 = Good		
	-													4 = Avg ((+)	0
														3 = A vg		•
														2 = A vg	Э	•
														1 = Poor		0

The chapter of this report titled "Scenario Development: Alternative Approaches" defined the baseline scenario and described three scenarios developed for this study. The technical analysis tool was utilized to evaluate the baseline, each of the three scenarios, and the preferred scenario. The following tables show the results of the analysis using this technical analysis tool for the baseline scenario and the scenarios A, B, and C.

Technical Analysis Tool Evaluation of the Baseline

Twenty-four congestion mitigations were itemized in the baseline scenario. The table detailing the results of the technical analysis tool for the baseline scenario can be found on the following pages.

Technical Analysis Tool Evaluation of Scenario A

Twenty-two congestion mitigations were itemized in Scenario A. The table detailing the results of the technical analysis tool for Scenario A can be found on the following pages.

Technical Analysis Tool Evaluation of Scenario B

Twenty congestion mitigations were itemized in Scenario B. The table detailing the results of the technical

analysis tool for Scenario B can be found on the following pages.

Technical Analysis Tool Evaluation of Scenario C

Nine congestion mitigations were itemized in Scenario C. The table detailing the results of the technical analysis tool for Scenario C can be found on the following pages.

Preferred Scenario

Overview

For the preferred scenario, an assumption is made that approvals for the proposed Heartland Town Square development would be granted by the end of 2014 and Phase I of the development would not be fully occupied until the end of 2017 or later. It is anticipated that Phase 1 will be developed in sub-phases with the fist sub-phase having a four year build-out. Phase 1A of Phase 1 is expected to include the following:

Office: 308,200 Square feet

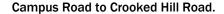
Retail: 488,100 Square feet

Civic: 85,500 Square feet

Residential: 1,225 units

Suffolk County has already programmed \$1.4 million in federal funds that have been received through the efforts of Congressman Israel and \$2.4 million in funds that have been awarded by the Regional Economic Development Council for the design and improvements to County roads in the vicinity of the proposed Heartland Town Square development (most immediately, Crooked Hill Road). These funds and the design and improvements associated therewith, along with the proposed Phase 1A development pattern, form the basis of the congestion mitigation scenario outlined below.

Motor vehicle trip generation from Phase 1A completion and occupation is projected to be distributed to six points of ingress/egress along area roadways. Three points of intersection with Crooked Hill Road (CR 13) are identified. The Figure on the following page depicts these on a map of the Heartland proposal. There is one point of access to the South Service Road of the Long Island Expressway (I-495) and one point of ingress/egress to Commack Road (CR 4). Access for the Heartland development is also proposed to flow via Campus Road to CR 13. Access from the Heartland development is also proposed to flow from the south via



Congestion mitigations for the roadways impacted are described as follows. Moving counterclockwise from the southernmost access point to the Phase 1A Heartland Town Square Development from Crooked Hill Road (CR 13), the first intersecting point is identified in the Matrix of Congestion Mitigations as CR 13-33.

Crooked Hill Road (CR 13)

Mitigation CR 13-33 is a reconstruction project along CR 13, Crooked Hill Road from CR 7 (Wicks Road) to CR 106 (Community College Rd/Campus Road/G Road). This project involves drainage system repair and replacement, pavement resurfacing, replacement of curb and sidewalk, the addition of new sidewalks, and any necessary signal improvements at CR 13 and McNair Street. The anticipated cost of this project will be approximately \$5,000,000.

Mitigation CR 13-30 is a resurfacing and drainage repair project along CR 13 from Brooke Avenue to CR 100 (Suffolk Avenue). The anticipated cost of this project will be approximately \$2,000,000.

Mitigations CR 13-21, CR13-22, CR 13-23, and CR13-26 involve the reconstruction of CR 13 to two northbound and two southbound lanes between the Long Island Expressway and CR 106; the construction of a signalized intersection at the existing Pilgrim State access; and the reconstruction of the intersection of CR 13 and CR 106 to include additional left turn lanes northbound, eastbound, and westbound. This mitigation project will also include a new signalized intersection to be constructed at the Sagtikos Parkway and G Road and the reconfiguration of the intersection at CR 13 and the Long Island Expressway North Service Road to include additional northbound and westbound lanes. These mitigations will be constructed under a single capital project. The anticipated cost of this project will be approximately \$8,500,000. Mitigation CR 13-21A will involve the reconstruction of CR 13 at the LIE North Service Road to include a southbound right turn lane. This project will require property acquisition and will not be completed until after 2017. The anticipated cost of this project will be approximately \$1,500,000.

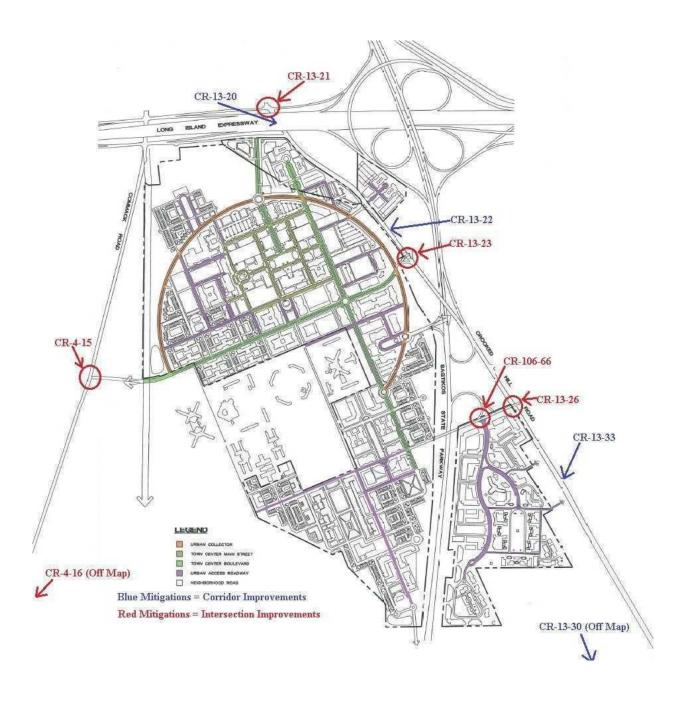
Further west, a new overpass with new southbound and northbound ramps including signals on G Road and three through lanes on G Road are proposed in the Heartland FGEIS. This work is not programmed to be constructed by Suffolk County and is not anticipated to be completed by 2017.

Moving north, another congestion mitigation is a state jurisdictional responsibility and includes reconstructing the CR 13 bridge over Sagtikos Parkway. The cost of construction is estimated to be approximately \$20,000,000. For the purposes of the short term preferred scenario, State construction mitigations are not considered viable in the near term and therefore are not tabulated in the cumulative analysis for the preferred scenario

North of the newly signalized intersection at the existing Pilgrim State entrance a new access for Heartland with CR 13 Crooked Hill Road is contemplated in the FEIS but is not programed to be constructed by Suffolk County. It is not expected that this intersection will be constructed by 2017.

Table 44





Long Island Expressway (NYS I-495)

The Conceptual Proposed Roadway Network plan for Phase 1A as shown in the Heartland Town Square DEIS indicates an access point to the development from the north via the Long Island Expressway South Service Road (NYS Route I-495). This access is referred to as "Town Center Boulevard." The proposed improvements are not expected to be completed by Suffolk County but possibly by the developer and include right turns in and out from the LIE South Service Road. It is not clear when this would be completed by the project sponsor but is not expected to be completed by 2017.

Crooked Hill Road (CR 13) and Long Island Expressway (NYS I-495)

Intersection improvements programmed by Suffolk County at the NYS I-495 (Long Island Expressway) North and South Service Roads include adding one southbound lane and reconstructing the westbound approach to three lanes (mitigation CR 13-21) This mitigation is estimated to cost approximately \$700,000. In addition, mitigation CR 13-20 includes restriping Crooked Hill Road under the LIE to provide either a second southbound lane or two northbound left turn lanes. No widening is required for this mitigation and the restriping within the existing pavement is estimated to cost \$9,000. This is not programmed to be constructed until after 2017.

Commack Road (CR 4) and Long Island Expressway (NYS I-495)

Improvements at CR 4 and the Long Island Expressway (NYS I-495) will involve reconstruction of the Long Island Expressway overpass. This mitigation is a \$14,000,000 federally funded and will not be completed by 2017. This mitigation will include reconstruction at the L.I.E. service roads on northbound, southbound and eastbound approaches adding a right turn lane and also adding one additional through lane on the eastbound and westbound approaches.

Commack Road (CR 4)

The Phase 1A Heartland Town Square plan indicates an ingress/egress to Heartland from Commack Road at the north end of the Heartland development. This intersection is located at the existing Pilgrim State access. Adding signalized access at Commack Road and the Pilgrim State access is another proposed mitigation (mitigation CR 4-15), as is constructing two left turn lanes westbound exiting the Pilgrim State site and constructing one right turn lane westbound exiting the Pilgrim State site. Suffolk County's investment in this mitigation is estimated to cost \$1,500,000. This mitigation is not proposed for current traffic conditions. It is to be constructed if deemed necessary in the future, in conjunction with any future development at Heartland Town Square.

Also included in the preferred scenario is congestion mitigation CR 13-30. This mitigation includes resurfacing and new pavement markings for Crooked Hill Road from Brook Avenue to the Southern State Parkway.

Numerous other congestion mitigations for the full build-out of the Heartland Town Square are proposed to be constructed by State, County, and other entities. Many of these mitigations are programmed for after 2017. Three mitigations (mitigations CR 4-15, CR 4-16, and CR 13-21) are considered as part of the preferred alternative.

Economic Evaluation of the Preferred Scenario

A cost-benefit analysis of the preferred scenario compares \$22 million of County investment generated with a \$1.4 billion increase in indirect economic output from the build-out of Phase 1A. The total sales tax generated by the Phase 1A development would be approximately \$17.9 million, with \$9.6 million of that total going to Suffolk County (see below). Property tax collected by the County would add another \$0.5 million. County infrastructure investment dollars would be reduced by any grant funding received for each of the construction mitigation projects.

As described in the Existing Conditions chapter, the multiplier effect refers to the impact that expenditures have on a regional economy, whereby initial expenditures lead to an increase in regional income over and above the original expenditures. The multiplier effect is the result of the repeated re-spending of incomes, minus "leakages" to economic actors outside the region. In other words, initial expenditures may cause a change in aggregate output (and hence the aggregate income that it generates) that is a multiple of the initial expenditure.

Using a customized Regional Input Output Model (RIMS II) for the Long Island region, the following three tables estimate what the impact of an estimated \$168,942,725 worth of construction spending and \$219,118,725 worth of operating expenditures/revenue associated with the proposed construction of phase 1A at Heartland Town Square would be. The proposal envisions 488,100 square feet of retail space, 1,225 residential units, 308,200 square feet of office space, and 85,500 square feet of civic space. It is assumed for the purposes of this economic impact model that residential units will average 800 square feet.

Other assumptions used in this economic impact model include: 1. construction costs of \$117.41 per square foot for retail space, \$120 per square foot for residential space, \$105.72 per square foot for office space, and \$136 per square foot for civic space; 2. total construction costs of \$57,307,821 for retail space, \$117,600,000 for residential space, \$32,582,904 for office space, and \$11,628,000 for civic space; 3. total construction costs of \$219,118,725; 4. office and retail space will be occupied at 85%, reflecting the vacancy rate of the office space market in western Suffolk in the second quarter of 2012; 5. office space returns an estimated \$150 per square foot in revenues/expenditures, for total annual expenditures/revenues of \$39,295,500 when adjusted for vacancies; 6. retail space returns an estimated \$500 per square foot in expenditures/revenues for total annual expenditures/revenues of \$207,442,500 when adjusted for vacancies; 7. total annual operating expenditures/revenues for retail and office space are estimated to be \$246,738,000.



The customized RIMS II multiplier model estimates that the expenditure for construction of \$219,118,725 will result in an overall increase in economic output for the region of \$594,030,863 over the entire period of construction. The net earnings, or profit increase, over the same period is estimated at \$141.1 million and the number of jobs in the various industries itemized in the table below would total 3,482, including 1,745 in the construction industry.

	Output, Earnir	ngs and Emplo				
	for the Constr	uction Indust	γ			
	(Retail Space	= : 488, 100 SF				
	Residential Ur	nits = : 1, 225 o	r 980, 000 SF			
	Office Space =	= 308, 200 SF				
	Civic Space = 8	Civic Space = 85, 500 SF)				
	Output	Earnings	Employment	Increase in	Increase in	Increase in
Industry	Multipliers*				Earnings	Jobs
Agriculture, Forestry, Fishing	0.0034	0.0007	0.0597	\$745,004	\$153,383	13.1
Mining	0.0017	0.0005	0.0094	\$372,502	\$109,559	2.1
Utilities	0.0228	0.0042	0.0470	\$4,995,907	\$920,299	10.3
Construction	1.0066	0.3568	7.9630	\$220,564,909	\$78, 181, 561	1,744.8
Manufacturing	0.1669	0.0324	0.7403	\$36,570,915	\$7,099,447	162.2
Wholesale Trade	0.0758 0.0219		0.3800	\$16,609,199	\$4, 798, 700	83,3
Retail Trade	0.1276	0.0393	1.6218	\$27,959,549	\$8,611,366	355.4
Transportation & Warehousing	0.0342	0.0110	0.3150	\$7,493,860	\$2, 410, 306	69.0
Information	0.0485	0.0114	0.1920	\$10,627,258	\$2, 497, 953	42.1
Finance & Insurance	0.1148	0.0265	0.4212	\$25,154,830	\$5, 806, 646	92.3
Real Estate; Rental & Leasing	0.1324	0.0077	0.2330	\$29,011,319	\$1,687,214	51.1
Professional, Scientific, Technical	0.0874	0.0365	0.7073	\$19,150,977	\$7,997,883	155.0
Management of Companies	0.0266	0.0105	0.1316	\$5,828,558	\$2,300,747	28.8
Administrative & Waste Management	0.0369	0.0138	0.5311	\$8,085,481	\$3,023,888	116.4
Educational Services	0.0112	0.0046	0.1715	\$2,454,130	\$1,007,946	37.6
Health Care & Social Assistance	0.0877	0.0383	0.9580	\$19,216,712	\$8, 392, 247	209.9
Arts, Entertainment & Recreation	0.0104	0.0038	0.1703	\$2,278,835	\$832,651	37.3
Accommodation & Food Services	0.0327	0.0112	0.7224	\$7,165,182	\$2, 454, 130	158.3
Other Servi œs	0.0396	0.0120	0.4563	\$8,677,102	\$2,629,425	100.0
Households	0.6438	0.0007	0.0596	\$141,068,635	\$153,383	13.1
Total	2.7110	0.6438	15.8905	\$594,030,863	\$141,068,635	3,481.9
* Shows the impact of each dollar of sp	ending					
** Shows the impact of each \$1 million	in spending					

Operations Multiplier for Office Space of Phase 1A

The multiplier model estimates that the operating costs for this project will be incurred every year after the



construction phase is completed and would amount to \$39.3 million annually for office space. The multiplier model estimates that the expenditure for operations of this amount will result in an overall increase in economic output for the region of \$119,717,670 million annually. The net earnings increase annually is estimated to be \$80 million, and the number of new jobs in the various industries itemized in the table below would total 1,801.

	Output, Earnir	ngs and Emplo						
	for Office Spa	œ Operations						
	Output	Earnings	Employment	Increase in	Increase in	Increase in		
Industry	Multipliers*	Multipliers*	Multipliers **	Output	Earnings	Jobs		
Agriculture, Forestry, Fishing	0.0031	0.0014	0.0014 0.1000 \$121,816 \$		\$55,014	3.9		
Mining	0.0224	0.0103	0.3000	\$880, 219	\$404, 744	11.8		
Utilities	0.0534	0,0323	0.9000	\$2,098,380	\$1, 269, 245	35.4		
Construction	0.0224	0.0150	0.5000	\$880, 219	\$589, 433	19.6		
Manufacturing	0.1175	0.0321	0,8900	\$4,617,221	\$1, 261, 386	35.0		
Wholesale Trade	0.0416	0.0202	0.6000	\$1,634,698	\$798, 769	23.6		
Retail Trade	0,0896	0.0445	1.4000	\$3, 520, 877	\$1,748,650	55.0		
Transportation & Warehousing	0.1071	0.0323	1.1000	\$4, 208, 548	\$1, 269, 245	43.2		
Information	0.1021	0.6677	11.6000	\$4,012,071	\$26, 237, 605	455.8		
Finance &Insurance	0.2055	0.0276	3,1000	\$8,075,225	\$1,084,556	121.8		
Real Estate; Rental & Leasing	0.2011	0.0388	0.8000	\$7, 902, 325	\$1, 524, 665	31.4		
Professional, Scientific, Technical	1.0899	0,5567	8,6000	\$42,828,165	\$21, 875, 805	337.9		
Management of Companies	0.1003	0.4470	9, 2000	\$3, 941, 339	\$17, 565, 089	361.5		
Administrative & Waste Management	0.0466	0.0194	0.9000	\$1,831,170	\$762,333	35.4		
Educational Services	0.0366	0.0099	0,5000	\$1, 438, 215	\$389,025	19.6		
Health Care & Social Assistance	0.0542	0.0364	2.0000	\$2,129,816	\$1, 430, 356	78.6		
Arts, Entertainment & Recreation	0.0242	0.0094	0, 2000	\$950, 951	\$369,378	7.9		
Accomodation & Food Services	0.0596	0.0255	2.4000	\$2,342,012	\$1,002,035	94.3		
Other Services	0.0256	0,0081	0.7000	\$1,005,965	\$318, 294	27.5		
Households	0,6438	0.0007	0.0596	\$25, 298, 443	\$27,507	23		
Total	3.0466	2.0353	45. 8496	\$119,717,670	\$79, 978, 131	1,801.7		
* Shows the impact of each dollar of sp	ending							
** Shows the impact of each \$1 million	in spending							

Operations Multiplier for Retail Space of Phase 1A

The multiplier model estimates that the annual expenditure for retail operations of \$207,442,500 will result in an overall increase in economic output for the region of \$655,580,533 annually. The net earnings increase annually is estimated to be \$121.7 million, and the number of new jobs in the various industries itemized in the table below would total 10,121.

	Output, Earnir	ngs and Emplo							
	for Retail Spa	ce Operations							
	Output	Earnings	Employment	Increase in	Increase in	Increase in			
Industry	Multipliers*	Multipliers*	Multipliers **	Output	Earnings	Jobs			
Agriculture, Forestry, Fishing	0.0033	0.0015	0.0900	\$684,560	\$311, 164	18.			
Mining	0.0233	0.0103	0,0400	\$4,833,410	\$2,136,658	8.3			
Utilities	0,0899	0.0455	1.5000	\$18,649,081	\$9, 438, 634	311.2			
Construction	0.0381	0.0250	0,8000	\$7, 903, 559	\$5, 186, 063	166.0			
Manufacturing	0.1174	0.0421	1.0000	\$24, 353, 750	\$8, 733, 329	207. 4			
Wholesale Trade	0.0456	0.0302	0,6000	\$9, 459, 378	\$6, 264, 764	124.5			
Retail Trade	1.0087	0.0555	30,6000	\$209, 247, 250	\$11, 513, 059	6, 347. 7			
Transportation & Warehousing	0.1071	0.0323	1.1000	\$22, 217, 092	\$6,700,398	228.2			
Information	0.1622	0.0389	1.5000	\$33,647,174	\$8,069,513	311.2			
Finance &Insurance	0.2356	0.0376	1.1000	\$48, 873, 453	\$7, 799, 838	228.2			
Real Estate; Rental & Leasing	0.3111	0.0408	1.2000	\$64, 535, 362	\$8, 463, 654	248.9			
Professional, Scientific, Technical	0.0755	0.0480	0.7000	\$15,661,909	\$9, 957, 240	145.2			
Management of Companies	0.0744	0.0480	1.4000	\$15, 433, 722	\$9, 957, 240	290.4			
Administrative & Waste Management	0.0356	0.0194	0.9000	\$7, 384, 953	\$4, 024, 385	186.7			
Educational Services	0.0344	0.029	0.5000	\$7, 136, 022	\$6,015,833	103.7			
Health Care & Social Assistance	0.0537	0.0355	3,0000	\$11, 139, 662	\$7, 364, 209	622.3			
Arts, Entertainment & Recreation	0.0125	0.0043	0.2000	\$2,593,031	\$892,003	41.5			
Accomodation & Food Services	0.0425	0.0229	1.6000	\$8, 816, 306	\$4, 750, 433	331.9			
Other Services	0.0456	0.019	0.9000	\$9, 459, 378	\$3, 941, 408	186.7			
Households	0.6438	0.0007	0,0596	\$133, 551, 482	\$145, 210	12.4			
Total	3.1603	0.5865	48.7896	\$655, 580, 533	\$121,665,026	10,121.0			
* Shows the impact of each dollar of sp	ending								
** Shows the impact of each \$1 million	in spending								

Total Economic Impact of Phase 1A

In total, throughout the construction period and annually when office space and retail space is 85% occupied, Phase 1A of the Heartland Town Square development is estimated to result in direct spending of \$465,856,725. The total indirect economic impact (including direct and indirect spending, or the "multiplier" effect), is estimated to be:

- 1. a \$1.4 billion increase in total economic output
- 2. a \$342.7 million increase in earnings, and
- 3. an increase of 15,405 jobs.

Sales Tax Impact of Phase 1A

Assuming the development of 488,100 square feet of retail space in Phase 1A and an 85% occupancy, the current 8.635% sales tax rate in Suffolk county, and sales of \$500 per square foot of retail space annually, the following table shows that the total sales tax generated by Phase 1A would be approximately \$17.9 million, with \$9.6 million of that total going to Suffolk County.

				Phase 1A
Suffolk		Phase 1A	Suffolk	Total Annual
County	Phase 1A	Total	County	Sales Generated
Sales Tax	Annual	Annual Sales	Sales Tax	Suffolk Portion
<u>Rate</u>	<u>Sales</u>	Tax Generated	<u>Rate</u>	Tax Generated
8.625	\$207,442,500	\$17,891,916	4.625	\$9,614,960

Property Tax Impact of Phase 1A

Assuming almost 1.8 million square feet of commercial and residential development in Phase 1A, total property taxes of approximately \$1.50 per square foot (as determined for similar properties in the Town of Islip's 2012 Property Tax Warrant filed with the Suffolk County Legislative Clerk's office), and the approximate percentage breakdown for each taxing jurisdiction (excluding village property taxes), also contained in the Town of Islip's 2012 Property Tax Warrant, it is estimated that the total property taxes generated by Phase 1A of Heartland Town Square would be approximately \$2.7 million, distributed by jurisdiction as shown in the table below.

		Phase 1a + 1	
	Percent of	Estimated	
	2012	Property Tax	Taxable
<u>Jurisdiction</u>	Tax Warrant	Generated*	Square Feet
School Districts	60.1	\$1,601,988	1,776,300
Town (includes lighting & garbag	16.2	\$432,200	
Fire Districts	3.9	\$103,068	
Other Town Special Districts (in	0.4	\$10,115	
County General Fund (excludes	1.1	\$28,303	
County College (excludes errone	0.1	\$2,553	
County Police District (excludes	11.2	\$299,337	
County District Court (excludes	0.3	\$7,817	
County Other (includes sewer di	5.5	\$145,269	
Erroneous Assessments Total	1.3	\$33,800	
Total Tax Warrant	100.0	\$2,664,450	
* \$1.50 total property tax per so			
estimated from 2012 Suffolk tax			
Total of 1.7 million SF does not	include		
85,500 SF of civic space			



Technical A	nalysis T	.00	ı - Prefe	rred S	ce	nario									
					L		.								
		_			1	Evaluation	Crite	rıa							
		-	Abilit Manage (Growth		Environ	menta	Protect Resourc	es	B	udge	tary	Viinimize 7 Impacts		
			erformance		re			Measure					e Measure		
Mitigatio n	Мар #	 Capacity Improvements 	2. Proximity to Development Areas (Innovation Zones)	3. Consistency with Comp. Plans	Average Sub-score*	Linear Feet along open space/parkland (zone of disturbance)	2. Increase in impermeable surface	3. Ability to remediate storm water runoff	Average Sub-score*	1. Reciprocal Funding	Value Capture	3. Long Term Maintenance	Average Sub-score*	Total Average Score*	
Add signalized access at Commack Rd and Pilgrim State access/Fish	CR 4-15	4	5	4	4	5	5	1	4	1	3	3	2	3	•
ntersection improvements at Long Island Avenue	CR 4-16	4	5	2	4	5	2	4	4	1	3	3	2	3	4
Re-Stripe Crooked Hill Rd under the LIE to provide two northbound eft turn lanes	CR 13-20	4	5	3	4	5	5	1	4	1	5	2	3	4	C
At LIE North Service Rd; reconstruct westbound approach (three anes)	CR 13-21	4	5	3	4	5	2	4	4	1	3	3	2	3	•
Widening to four thru lanes plus turn lanes between LIE and Campus Rd, CR 106	CR 13-22	5	5	4	5	5	1	4	3	1	1	4	2	3	•
Existing Pilgrim intersection will be reconstructed and a traffic signal nstalled. Eastbound approach will be expanded	CR 13-23	4	5	4	4	4	2	4	3	1	2	4	2	3	•
At Community College Drive, CR 106, add second left turn lane northbound; add second left turn lane westbound; Add second eastbound left turn lane; Reconstruct intersection	CR 13-26	4	5	4	4	3	2	4	3	1	1	4	2	3	•
CR13, CrookedHill Roadfrom Brook Ave to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	2	2	2	2	5	5	1	4	1	3	2	2	3	•
mprovements to CR13, Crooked Hill Road from CR 7, Wicks Road to the Vicinity of CR 106, Campus Road, resurfacing, signal reconstruction	CR 13-33	5	3	3	4	5	5	1	4	1	5	3	3	4	C
ntersection reconstruction at G-Road and Sagtikos State Parkway exit ramp (Note: this mitigation will be a component of the project dentified by Map # CR 13-22)	CR 106-66	4	5	4	4	4	2	4	3	1	3	3	2	3	•
NOTES:															
* Average Scores are rounded															
1) Not proposed for current traffic conditions.															
													Key		
													5 = Good		•
													4 = Avg (+)	Č
													3 = Avg		Ğ
													2=Avg(-)	ē
													1=Poor	. /	C

Environmental Evaluation of the Preferred Scenario

Congestion Mitigation

Six maps detailing environmental conditions were presented and discussed in the Existing Conditions chapter of this document. As indicated in earlier chapters, an important environmental consideration related to the identified congestion mitigations is the ability of the individual mitigation to reduce

congestion. A reduction in congestion will play a significant role in reducing energy consumption and air pollution. The traffic mitigations in the preferred scenario are proposed on three County Roads: Commack Road (CR 4), Crooked Hill Road (CR 13) and College Road (CR 106). These three County Roads connect and augment the principal arterial roadways in the study area (Sagtikos Parkway and the Long Island Expressway). The technical analysis tool evaluation of the Preferred Scenario identified 9 out of 10 individual mitigations that would have a particularly strong ability to reduce congestion.

Sensitive Environmental Areas

As outlined in the Environmental Conditions section of the Existing Conditions chapter of this report, there are various environmental conditions in the study area that have the potential to play an important role in shaping the development pattern in a given location. Therefore, it is critical to identify locations where environmental conditions may impact the planned congestion mitigations. In the preferred alternative, the majority of the identified construction mitigations are not located in or adjacent to environmentally sensitive areas such as the Long Island Sound Study Watershed, the South Shore Estuary Reserve Watershed, river/stream corridors, NYS Freshwater Wetlands, or designated open space and parkland.

However, two of the identified mitigations are adjacent to open space/parkland. The identified mitigation to add signalized access at Commack Road and the Pilgrim State access (mitigation CR 4-15) is located adjacent to the Oak Brush Plans State Preserve at Edgewood (Edgewood Preserve). In addition, the proposed mitigation on Crooked Hill Road, in which left turn lanes are added at the Campus Road intersection (mitigation CR 13-26), is also adjacent to New York State parkland.

One Preferred Scenario mitigation located on Crooked Hill Road is located in the South Shore Estuary Reserve Watershed. This mitigation includes a proposed resurfacing project on Crooked Hill Road from Brook Avenue to the Southern State Parkway (mitigation CR 13-30). This mitigation within the South Shore Estuary Reserve Watershed is anticipated to capture and treat the first flush of storm water runoff and as a result, it will have a long-term positive effect on groundwater and surface water in the Reserve.

Walk Score

A <u>Walk Score</u> analysis was completed for all of the preferred scenario congestion mitigations locations. The average Walk Score for the Scenario C congestion mitigations is 30, which indicates a relatively low walkability based on existing conditions. The Preferred Scenario congestion mitigation with the highest walk score is CR 4-16, which is located near the Tanger Outlets in Deer Park. The other congestion mitigations received a relatively low walk scores due to their large distances from mixed use development areas. It is important to note that the Walk Scores are based on existing conditions and that future development could significantly change the walkability of a community and thus the calculated Walk Scores. *Table 44* shows the Walk Score values for each of the different baseline congestion mitigations.

Scenario C Congestion	Walk Score (Score 0 -100)
Mitigation Map Number	Note: a score of 100 represents a most walkable
CR 4-15	23
CR 4-16	83
CR 13-20	11
CR-13-21	11
CR-13-22	35
CR 13-23	17
CR-13-26	57
CR 13-30	52
CR 13-33	26
CR 106-66	3

Source: Prepared by Suffolk County Division of Planning and Environment, based on results at WalkScore.com.

Bus Rapid Transit Evaluation of the Preferred Scenario³

The Literature Review and the Existing Conditions chapters of this report contained descriptions and discussion of Bus Rapid Transit (BRT) in Suffolk County. The implementation of a BRT system would provide a new alternative mode of transportation which would link key nodes (referred to as catchment areas) in the study area. This new connectivity will also improve the existing public transportation system in the study area. An improved public transportation system will foster economic development and help to improve the quality of life within the study area. In addition, a revamped public transportation system will serve as an important congestion mitigation measure for the study area.

Key BRT Elements in the Preferred Scenario

Key BRT elements to be incorporated into the preferred scenario may include:

1. Preferential Bus Improvements

"Queue jumps" may be installed to direct buses to designated portions of curbside travel lanes at signalized intersections, enabling buses to bypass general traffic stopped at the signal. Dedicated bus lanes, or running ways, allow buses to bypass congestion, reduce travel time, and provide more

reliable service. Wherever possible, preferential treatments would be implemented in existing right-of -ways.

2. Stations

Enhanced stations may be located at key County facilities, major employment and residential centers, colleges and universities, and transportation hubs such as LIRR stations. To decrease travel times between stops, BRT stations may be more widely spaced than conventional bus service. BRT stations may also be integrated with existing Suffolk County Transit service to facilitate seamless transfers to and from local buses. BRT stations can include passenger amenities such as climate control, real time web-based passenger information systems (that enable passengers to know when the next bus will arrive), solar panels, safety improvements, enhanced landscaping, and public art.

3. Stylized Vehicles and Branded Service

BRT systems with a strong brand can distinguish themselves from conventional buses. BRT vehicles often run on alternative fuels or hybrid technologies for a cleaner and quieter trip, and can be designed to carry more passengers. Specialized vehicles may include low floors and multiple boarding doors, allowing passengers to enter and exit more quickly, resulting in less time spent at stops and decreased travel times.

4. Improved Service

BRT systems provide more service for riders that is faster, more reliable, and more frequent than standard bus service

5. Fare Collection

Pre-paid or electronic passes can increase the convenience and speed of fare collection, decreasing boarding times and providing travel time savings.

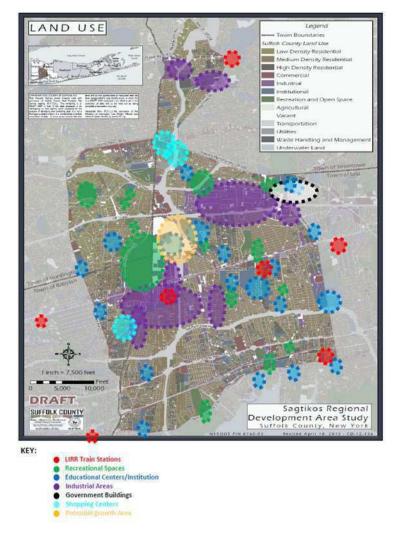
6. Transit Signal Priority (TSP)

Transit Signal Priority (TSP) is technology that can shorten a red traffic signal or extend a green signal to keep buses moving and increase the transit capacity of a corridor.

³The sections of this chapter discussing Bus Rapid Transit (BRT) represent key findings identified in the Suffolk County Bus Rapid Transit Feasibility Study. Additional planned analyses may result in alternate or additional recommendations. Although BRT was not part of the original scope of work of the Sagtikos Regional Development Area Study, discussions of BRT are included in this report for informational and exploratory purposes. No effort related to the BRT sections has been allocated to the grant underwriting the Sagtikos Regional Development Area Study.

Key BRT Nodes and Catchment Areas in the Study Area

The following map highlights the key BRT nodes and catchment areas in the study area. These catchment areas include the study area's key development areas (such as Heartland Town Square), industrial parks (such as the Hauppauge Industrial Park and the Heartland Industrial Park), institutional centers (such as Suffolk County Community College and Pilgrim Psychiatric Center), shopping centers, and railroad stations.

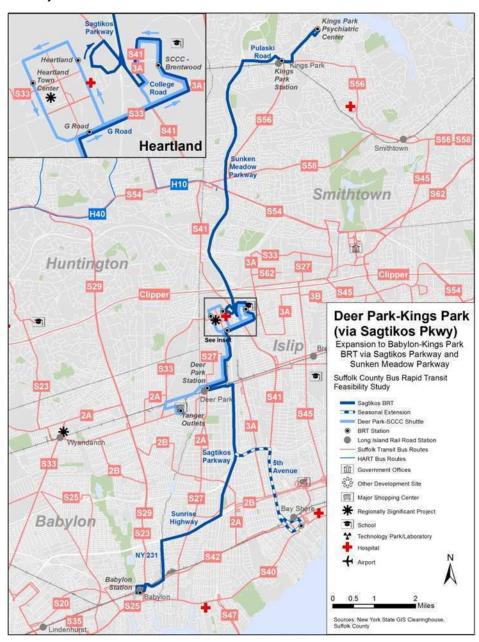


Possible BRT Route in the Study Area

One objective of County Executive Steven Bellone's Connect Long Island regional transportation and development plan is to create north-south mass transit connections between key county assets. The Suffolk County Bus Rapid Feasibility Study identified a significant potential BRT route within the study area: Babylon to Kings Park via the Sagtikos Parkway. The Suffolk County Feasibility Study concluded that most of the existing traffic congestion along this corridor is concentrated on the Sagtikos/Sunken Meadow Parkway

between Crooked Hill Road and Pulaski Road, as well as in the vicinity of the Deer Park LIRR station. Future traffic conditions are estimated to worsen, which indicates that the corridor could benefit from implementation of BRT improvements.

The major components of the study area's transportation network (the Long Island Expressway, Northern State Parkway, Sunrise Highway, Southern State Parkway, and the LIRR) are laid out in the east-west direction. The proposed route discussed below aligns with the Connect Long Island objective of creating a north-south mass transit corridor. The figure below shows this possible BRT route in the study area that can be used to connect key catchment areas.



The Deer Park - Kings Park corridor connects the Suffolk County Community College's Brentwood Campus with the Deer Park and Kings Park LIRR stations, the Tanger Outlet Center in Deer Park, and the proposed Heartland Town Square development in Brentwood. The Ronkonkoma Branch of the LIRR, which includes the Deer Park station, is scheduled to see increased service with the eventual addition of a second track on this rail line. BRT service could be extended south to Babylon to connect with the Babylon railroad station, which has frequent service along the electrified Babylon Branch of the LIRR. BRT service on this corridor could also be extended north to Nissequogue State Park. During the summer, an extension to Bay Shore would allow connections with ferry service to Fire Island. BRT service would operate between the Babylon LIRR Station and downtown Kings Park (shown as a dark blue line on the map), with a seasonal extension to downtown Bay Shore (shown as a dashed line on the map). Shuttle service would operate between Tanger Outlets and Suffolk County Community College (shown as a light blue line on the map).

In summary, this potential BRT corridor would serve the following major nodes:

- Downtown Babylon and Babylon LIRR station
- Downtown Bay Shore and Bay Shore LIRR station
- Fire Island Ferries
- Tanger Outlet Center
- Deer Park LIRR station
- Heartland Town Square (proposed)
- Suffolk County Community College, Brentwood Campus
- Downtown Kings Park and Kings Park LIRR station
- Nissequogue State Park

In the short term, service could operate as two commuter shuttles. One commuter shuttle would operate between the Deer Park LIRR station and Suffolk County Community College via Long Island Avenue, Heartland Boulevard, and G Road. This shuttle would serve Heartland Town Square at a stop along G Road. Another shuttle service would operate between Tanger Outlets and Kings Park via the Deer Park LIRR Station and several stops within Heartland Town Square. This service could be extended from downtown Kings Park to Nissequogue State Park if desired. This service would operate all day, and would be oriented towards providing access to Heartland Town Square.

In the long term, service in this corridor would be upgraded from commuter service to BRT service. This proposal assumes eventual upgrades allowing bus service to operate on the Sagtikos and Sunken Meadow Parkways, including eliminating height restrictions on underpasses that currently restrict the passage of

standard-height buses at some locations. The initial plan does not call for any stops along the parkways. The addition of such stops would require a major investment in infrastructure, including pedestrian over/ underpasses. In the long term, two services would operate in this corridor: BRT service would be provided between the Babylon LIRR Station and the Kings Park LIRR Station via the Sagtikos and Sunken Meadow Parkways. The BRT would exit the Parkway to serve Suffolk County Community College, Heartland Town Square, and the Deer Park LIRR Station. During the summers, some trips would operate to downtown Bay Shore (via 5th Avenue) rather than the Babylon LIRR Station in order to provide connections with the Fire Island ferries. A shuttle route would operate between the BRT station at G Road and Suffolk County Community College, Heartland Town Square, the Deer Park LIRR Station and Tanger Outlets.

BRT service would operate approximately every 20 minutes during peak periods and every 30 minutes offpeak. Commuter shuttle service would meet each eastbound and westbound train at the Deer Park LIRR station. Service would operate seven days per week, from early in the morning to late in the evening.

In the entire Deer Park – Kings Park corridor, 5 out of 22 signalized intersections are eligible for queue jumps and Transit Signal Priority (TSP). Four of these intersections would require some level of reconstruction. This corridor can be divided into four main sections and two future extensions, based on potential compatibility with the preferential BRT roadway improvements of shoulder-running dedicated bus lanes and queue jumps with TSP at signalized intersections. The four main sections of the corridor and two extensions are:

- 1. The section between the Tanger Outlets in Deer Park and the proposed Heartland Town Square.
 - ♦ 2 out of 8 signalized intersections are eligible for queue jumps and TSP.
 - **♦ 2** of these intersections would require some level of reconstruction.
- 2. The loop in the middle of the corridor between the proposed Heartland Town Square and the SCCC Brentwood Campus.
 - ♦ 1 signalized intersection would benefit from queue jumps and TSP in the long term.
 - **♦** This intersection would require some level of reconstruction.
- 3. The main spine of the corridor on the Sagtikos/Sunken Meadow Parkway between Crooked Hill Road and Pulaski Road (CR 11).
- 4. The small northern section between the Sagtikos Parkway and the Kings Park LIRR station.

- None of the 3 signalized intersections are feasible for queue jumps or TSP.
- 5. Future extension Tanger Outlets to Babylon LIRR Station.
 - **♦ None of the 3 signalized intersections are feasible for queue jumps or TSP.**
- 6. Future extension Seasonal connection to Bay Shore via 5th Avenue.
 - ♦ 2 out of 7 signalized intersections are eligible for queue jumps and TSP.
 - **♦ 1** of these intersections would require some level of reconstruction.

There are limited opportunities to add queue jumps with TSP at certain signalized intersections, although in most cases this would require curb redesign and construction work. Several signalized intersections along the corridor are not candidates for queue jumps because of a lack of available right-of-way. Also, there are no signalized intersections along the main spine of the corridor on the Sagtikos Parkway.

NYSDOT will be conducting an operational performance study of the Sagtikos State Parkway/Sunken Meadow State Parkway between Southern State Parkway and NY Route 25A. The study will examine the need for capacity improvements and will recommend feasible alternatives that will be advanced into the design phase by separate efforts. Implementation of the recommended alternatives could result in modifications to the physical characteristics and traffic flow of this corridor.



Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

6-CONCLUSION (TASKS9)

CONCLUSION

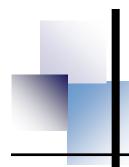
Under the Transportation, Community and System Preservation (TCSP) program, part of the 2007 Safe Accountable Flexible Efficient Transportation Equity Act, Suffolk County was awarded a grant to formulate short-term and long-term congestion mitigation measures for current and proposed development in and around the "Sagtikos Regional Development Zone" and to coordinate planning for future land use decisions and transportation solutions in this area.

The report includes a literature search chapter that revealed 69 congestion mitigation measures envisioned for the study area spanning some three decades. The Sagtikos Regional Development Area Study includes a land use chapter that forms the basis of existing conditions and the baseline for analysis. The chapter spans land use by category, existing development patterns, environmental conditions, and motor vehicle characterizations of the study area.

A preferred short-term County scenario is presented that includes 10 Suffolk County sponsored congestion mitigations. For this scenario, an assumption is made that approvals for the proposed Heartland Town Square development would be granted in 2014. It is anticipated that Phase 1 will be developed in subphases with the fist sub-phase having a four year build-out. This sub-phase, 1A of Phase 1 is reported to include the following: 308,200 square feet of office space; 488,100 square feet of retail space; 85,500 square feet of civic space; and 1,225 residential units. Suffolk County is committed to performing the required mitigation on County roads to address current roadway needs as well as any projected impacts of the Heartland Town Square project. The County has already programmed \$1.4 million in federal funds that have been received through the efforts of Congressman Israel and \$2.4 million in funds that have been awarded by the Regional Economic Development Council for the design and improvements to County roads in the vicinity of the proposed Heartland Town Square development. These funds and the design and improvements associated therewith, along with the proposed Phase 1A development pattern, form the basis of the preferred short-term congestion mitigation scenario outlined herein.

The proposed congestion mitigation projects for the core of the study area under Suffolk County's proposed preferred scenario adequately handle build-out of the Heartland Town Square phase 1A development pattern.

Further study of congestion mitigations is recommended for other entities (including the project sponsors) for the proposed Heartland Town Square, New York State, and local governments. In coordination with Suffolk County, this further study should address the long-term build-out of the core of the Sagtikos Regional Redevelopment Area and additional congestion mitigation solutions for roadways in the immediate and outlying areas.



Suffolk County Department of Economic Development & Planning

Sagtikos Regional Development Area Study

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APPENDICES

APPENDIX 1: REGIONALLY SIGNIFICANT CRITERIA

The Suffolk County Planning Commission focuses its staff resources on those zoning and subdivision referrals which are likely to have inter-community or countywide impacts. Those impacts would result from either the characteristics of the parcel or of the proposed project. Those projects with inter-community or county-wide impacts are considered to be "regionally significant." On July 2, 2008 the Commission adopted a definition of a regionally significant project (see the *Suffolk County Planning Commission Guidebook* for a complete list). All referrals meeting this definition are evaluated by the full Commission. The staff to the Commission may also recommend that the Commission consider a referral that does not meet the definition but which the staff considers significant.

Only certain regionally significant criteria are relevant to the Sagtikos Regional Development Area. Within the Sagtikos Regional Development Area, any proposal meeting any of the following criteria would be considered regionally significant:

- A. The adoption or amendment of a municipality's land use plan, or the adoption or amendment by any agency of a comprehensive resource management plan;
- B. Construction of new residential units that meet or exceed the following thresholds:
 - 1.50 dwelling units if not connected to an established municipal sewer district;
 - 2.100 dwelling units if connected to an established municipal sewer district.
- C. The physical alteration of 20 or more acres;
- D. Parking for 1,000 or more vehicles;
- E. A facility or development with at least 100,000 square feet or gross floor area;
- F. Any new mining, pipeline transportation, heavy manufacturing, electric power generation and transmission, chemical storage facility, waste treatment and disposal facility, or the expansion of an existing mining, pipeline transportation, heavy manufacturing, electric power generation and transmission, chemical storage facility, waste treatment and disposal facility.

Projects fitting these criteria were researched and the relevant project data was tabulated for inclusion in this study.

APPENDIX 2: TRAFFIC MITIGATIONS

Tanger Outlet - Proposed Traffic Mitigations Implemented (unless otherwise noted) Source: DEIS (1/24/05), SCDPW

- 1. On Commack Road (CR 4) between Nicolls Road and Quail Run Drive, a closed loop traffic signal system will be installed. This will improve the progression of the traffic on Commack Road and improve traffic flow in this area. In addition, other improvements to intersections within this area are required to be implemented. A summary of the improvements are as follows:
 - Commack Road (CR 4) at Quail Run Drive and Nicolls Road Modifications to the timing of the intersections upon the installation of the traffic signal system and the rebuild of one signal.
 - II. Commack Road (CR 4) at Long Island Avenue The existing traffic signal at this location shall be reconstructed to provide a northbound protected/permissive left turn phase and the timing modified upon the installation of the traffic signal system.
 - III. Commack Road (CR 4) at Marcus Boulevard The existing pavement shall be modified to include an additional southbound left turn lane (dual southbound left). The existing traffic signal shall be reconstructed to provide a northbound protected/permissive left turn phase and southbound protected only left turn phase. The pavement markings on the eastbound approach shall be reconfigured from a dedicated left turn to a left through arrangement. This will provide two through lanes in to the site
- 2. Based on concerns of the Town of Babylon, the traffic conditions on Grand Boulevard at Commack Road were explored. RMS Engineering (Tanger's engineer) believed that the prohibition of westbound traffic at this location would improve traffic conditions on Grand Boulevard between Commack Road (CR 4) and Deer Park Avenue (NYS Route 231), but this mitigation was not undertaken. The modification also consisted of the following:
 - I. Modify the pavement markings eastbound on Grand Boulevard to provide a left turn, left-through and through-right turn lanes.
 - Modify the pavement markings westbound on Grand Boulevard to provide an additional left turn lane.
 - III. Modify the traffic signal at this location to split the eastbound/westbound phases and remove the northbound protected left turn phase. (*These were not done*, however, the following were done: an additional southbound left turn lane was added on CR 4 and the left turn was changed to fully protected phase, and an additional left turn lane was added to westbound Grand Boulevard and changed to a fully protected phasing.)

Improvements to the intersection of Grand Boulevard at Marcus Boulevard were also required. These improvements were:

- iv. Removal of the westbound approach (This was not done.)
- v. Install signing on Grand Boulevard directing vehicular traffic to use Marcus Boulevard to enter the site.
- vi. Modify the pavement markings on Grand Boulevard to install an eastbound left turn lane into Marcus Boulevard.
- vii. Modify the existing traffic signal at this location to provide a separate right turn arrow

during the eastbound phase.

- 3. At the intersection of Commack Road (CR4) at the LIE Service Roads, the following improvements should be implemented:
 - I. At the North Service Road, an exclusive southbound right turn lane should be installed and the timing of the traffic signal be modified. (*This was not done, due to a lack of right of way.*)
 - II. At the South Service Road, exclusive eastbound and northbound right turn lanes should be installed and the timing of the traffic signal should be modified by NYS DOT.

Both of these improvements will require physical modification to the existing traffic signals at these locations.

RMS Engineering is currently exploring the availability of right of way to perform the required improvements. The Applicant is willing to perform a "fair share" contribution to the cost of the construction of the improvements due to the fact there are other projects in this area that are generating traffic that will have an impact on the traffic conditions at these locations.

- 4. At the intersection of Commack Road (CR 4) at Bay Shore Road (CR 57), it was determined that the improvements being suggested by the SCDPW will improve traffic conditions in the future at this location, with or without the traffic generated by the proposed project. The traffic generated by this project will require modification to the traffic signal timings. The applicant has indicated a willingness to perform a "fair share" contribution to the roadway improvements at this location. Improvements to this location were completed by SCDPW in 2012 under a capital project using federal funds.
- 5. At the intersections of Deer Park Avenue (NYS Route 231) at Long Island Avenue and Grand Boulevard and at the intersection of Bay Shore Road (CR 57) at Howell's Road, timing modifications will be required at these locations to improve the operation at these locations.
- 6. On Grand Boulevard at the proposed easterly site access and the central site access, traffic signals area proposed to be installed. Additionally, the pavement markings on Grand Boulevard from the existing Kohl's driveway east to the easterly driveway are proposed to be modified and turn lanes installed where appropriate. These modifications are depicted on the site plan for the project. It is also proposed to install a coordinated traffic signal system on Grand Boulevard from the Kohl's driveway to the easterly site driveway to improve traffic flow on Grand Boulevard.
- 7. At the intersection of Grand Boulevard at Corbin Avenue/Howell's Road, it is proposed to reconfigure the intersection to provide a dedicated eastbound channelized right turn lane, convert the two existing eastbound lanes to left turn lanes and modify the intersection north of Grand Boulevard to accommodate the two left turn lanes and provide a transition back to one lane on Corbin Avenue. In addition, a southbound right turn lane is required to be installed. Additional traffic signal timing and phasing to introduce a southbound right turn phase will be modified at this location.
- 8. At the intersections of Deer Park Avenue (NYS Route 231) at Commack Road (CR 4), Pine Aire Drive at Sagtikos State Parkway Southbound ramp and Pine Aire Drive at Sagtikos State Parkway Northbound ramp, it was determined the traffic generated by the project has no significant impact on the operation of these locations. Modifications were therefore not required at these locations.
- 9. At the unsignalized intersection of Corbin Avenue at Pine Aire Drive, it was determined that as an

unsignalized intersection would experience a degradation in operation. A traffic signal will be installed at this location to improve its operation due to the fact that the traffic flow primarily consists of westbound left turns and northbound right turns.

Deer Park Shopping Center (Unicorp) – Proposed Traffic Mitigations Implemented (unless otherwise noted) Source: DEIS (December 2005), SCDPW

Upon a review of the information contained in Tables 2-12 of the Traffic Impact Study of the DEIS, the following can be stated:

- 1. Upon the introduction of the site-generated traffic, the intersection of Commack Road (CR4) at Nicolls Road will experience an imperceptible increase in delay and no degradation in LOS during the time periods studied. The "Build with mitigation" scenario assumes mitigation measures that are associated with the proposed Tanger Outlet Center at The Arches are implemented. The mitigation associated with the Tanger project includes the installation of a closed loop traffic signal system, additional traffic signal phasing and timing adjustments. This mitigation improves the overall operation of the intersection and motorists will experience less delay than in the "No Build" scenario.
- 2. The proposed signalized site access driveway on Commack Road (CR 4) is anticipated to operate at acceptable Levels of Service during all time periods studied. Assuming that the proposed Tanger Outlets Center at the Arches is approved, this signal will be incorporated into the closed loop traffic signal system. This will improve the overall operation of the intersection.
- 3. Upon the introduction of the site generated traffic, the intersection of Commack Road (CR4) at Long Island Avenue will experience an increase in delay and degradation in LOS during the PM and Saturday peak hours. It is proposed to construct an exclusive southbound right turn lane at this intersection. This will improve the overall operation of the intersection when compared to the "No Build" scenario. The addition of this lane is proposed by the applicant and will be implemented regardless of the approval of the Tanger Outlet Center at The Arches.
- 4. The proposed unsignalized east site access driveway on Long Island Avenue is anticipated to operate at acceptable Levels of Service during the time periods studied.
- 5. The proposed unsignalized west site access driveway on Long Island Avenue is anticipated to operate at acceptable Levels of Service during all time periods studied.
- 6. Upon the introduction of the site-generated traffic, the signalized intersection of Long Island Avenue at Carlls Path will experience no degradation in Levels of Service during the peak hours studied. No mitigation is required at this location as a result of the traffic generated by the proposed project.
- 7. Upon the introduction of the site-generated traffic, the intersection of Long Island Avenue at Deer Park Avenue (NYS RT. 231) will experience an increase in delay and degradation in Level of Service during the time periods studied. To improve the operation of this intersection, the westbound approach should be reconfigured to include an exclusive left turn lane and a through/right lane. Timing adjustments should also be performed. Upon the implementation of these improvements, the subject intersection will operate with less delay and a better Level of Service during all time periods studied. However, it should be noted that the westbound approach of the intersection of Long Island Avenue at Deer Park Avenue (NYS RT. 231) at its present condition operates at or above capacity during all of the time periods studied. The reconfiguration will prevent any worsening of this condition. However, this condition exists as a result of area conditions and is not the product of the proposal. To improve the Level of Service at this intersection, the Town may wish to

- establish a fund and seek contribution from the applicant and other projects in the area towards the installation of intersection improvements in the future. (These improvements were not completed.)
- 8. Upon the introduction of the site-generated traffic, the intersection of Nicolls Road at Deer Park Avenue (NYS RT 231) will experience no degradation in LOS during the peak hours studied. No mitigation is required at this location as a result of the traffic generated by the proposed project.
- 9. Upon the introduction of the site-generated traffic, the signalized intersection of Nicolls Road at Carll's Path will experience no degradation in LOS during the peak hours studied. No mitigation is required at this location as a result of the traffic generated by the proposed project.
- 10. Upon the introduction of the site-generated traffic, the unsignalized intersection of Nicolls Road at Homer Avenue will experience no degradation in LOS during the peak hours studied. No mitigation is required at this location as a result of the traffic generated by the proposed project.
- 11. The proposed unsignalized west site access driveway on Nicolls Road is anticipated to operate at acceptable Levels of Service during all time periods studied.

Some of the mitigation measures proposed were based on the future development of the Tanger Outlet Center and are assigned to its applicant for implementation. If the Tanger Center was not developed, however, the Unicorp applicant would still be required to implement some of the mitigation measures. These include:

- 1. Signal and timing improvements to the traffic signal at the intersection of Commack Road and Long Island Avenue;
- 2. Installation of the traffic signal on Commack Road at the main site driveway (This was not completed.);
- 3. Construction of the southbound right-turn lane on Commack Road at Long Island Avenue;
- 4. Timing and coordination improvements to the traffic signals along Commack Road from Quail Run to Nicolls Road.

Heartland Business Center Expansion

Traffic Mitigation Analysis – April 2002 FEIS

Proposed development (potential):

Additional build-out of 1.3 million S.F. light industrial and warehouse space, with parking stalls for approximately 3,120 cars, and 170 trucks. Under construction with portions completed and occupied.

Arriving and departing vehicles would use Executive Drive, which in turn connects with Pine Aire Drive and Long Island Avenue.

*Though not by design stated in the FEIS, relatively heavy vehicular commuter traffic has been observed over the vacated Pilgrim State Hospital lands to the north by cars arriving and departing the Business Center. This point of access is also depicted on Heartland Towne Square mapping or listed under traffic impact mitigations.

Intersections of Concern/ Mitigations of the traffic impacts from the Project:



Long Island Expressway West Bound Ramp and Commack Road/ Not addressed in the Chapter on mitigations even though identified as a concern. (This was not done.)

Long Island Avenue and Executive Drive/ Lane re-striping that shows west bound approach having two left -turn lanes, shows shared thru and turn lanes; and retiming traffic lights.

Pine Aire Drive and Executive Drive/ Retime traffic lights; Lane re-striping; and extending westbound/right turn approach 150 feet.

Pine Aire Drive and Sagtikos Parkway North Bound Ramp/ Retime traffic lights; Add a second northbound left-turn lane, which completion is not indicated from most recent aerial pictometry (2011).

Pine Aire Drive and Sagtikos Parkway South Bound Ramp/ Retime traffic lights; And lane re-striping westbound approach showing a shared thru & turn lane and a thru lane.

Long Island Avenue and Commack Road/ Retiming traffic lights. LOS remains low.

Pine Aire Drive and Fifth Avenue/ Retime traffic lights; Lane re-striping both eastbound approach from 3 lanes to 4 lanes; and restripe westbound and southbound approaches with exclusive turning lanes. (Mitigations work completion not observed from 2011 aerial pictometry.)

Scoping alternatives that were developed are as follows:

Widening and improving existing roadways west of Emjay Boulevard to produce a continuous CR 100 roadway north of the LIRR tracks to CR 4, Commack Road, maximizing the use of existing roadways. Include a new grade separation interchange at the Sagtikos Parkway. (This was not done.

Add (or as an alternative) a connection from the new CR 100 to Crooked Hill Road, CR 13, via Emjay Boulevard, and lands of the former Pilgrim State Hospital and the extension of CR 106, Campus Road. (This was not done.)

If these alternatives prove nonviable, then the County may elect to analyze the following: Improve CR 13, Fifth Avenue (from 2nd Avenue to CR, Wicks Road) and Pine Aire Drive only. (*This was not done.*)

*DPW representative indicated that the Community Participation Program resulted in the discontinuation the analysis of widening CR100 (Long Island Avenue).

Central Islip Planned Development District: Master Plan Update, Zoning Amendments and Development Proposals – FSGEIS (Jan 2005):

"Proposed Traffic Mitigations & Additional Consideration"

Proposed Traffic Mitigations

The analysis of impacts due to the traffic expected to be generated by the developments considered as part of the Master Plan Update has indicated a degradation of operating conditions at the intersection of Carleton Avenue at Courthouse Drive/DPW Drive and Lowell Avenue at Belt Drive East/East Cherry Street. In addition, due to the examination of the roadways in the study area a number of roadways that should be improved as adjacent sites develop have been identified.

Carleton Avenue at Courthouse Drive/DPW Drive

Traffic due to elements of the Master Plan Update is expected to result in a degradation in LOS from LOS B to LOS E during the weekday P.M. peak hour at this signalized intersection, to mitigate this condition it is recommended that:

- Widen the DPW Drive approach and restripe for three lanes; a single receiving lane, a combined left turn/thru lane and a separate right turn lane.
- Reconstruct the traffic signal to accommodate the widened approach and an eastbound to southbound right turn overlap phase.
- Retime the traffic signal.

Wheeler Road at Motor Parkway

Traffic due to elements of the Master Plan Update is expected to result in a degradation in LOS from LOS C to LOS D during the weekday P.M. peak hour at this signalized intersection. To mitigate this condition, it is recommended that:

- Modify the traffic signal to accommodate a northbound and a southbound left turn phase.
- Retime the traffic signal.

Lowell Avenue at Belt Drive East/East Cherry Street

Traffic due to elements of the Master Plan Update is expected to result in a degradation in LOS at this signalized intersection. The LOS is expected to drop from LOS A to LOS B during the weekday A.M. peak hour from LOS B to LOS C during the weekday P.M. peak hour. To mitigate this condition it is recommend that:

- Modify the traffic signal to allow for a leading eastbound phase and a southbound to westbound right-turn overlap phase.
- Retime the traffic signal.

DPW Drive Between Carleton Avenue and South Technology Drive

This segment of roadway does not meet Town of Islip standards for commercial streets and should be reconstructed in light of the proposed adjacent uses. To this end the following is proposed:

- Taking of property necessary to establish a 60 foot roadway Right-of-Way. (This was not done.)
- Construction of a 40-foot wide pavement to Town commercial standards. (This was not done.)
- Installation of curb and sidewalk on both sides for the entire length. (This was not done.)
- Construction of parking in the right-of-way adjacent to the Central Islip Little League(This was not done.)

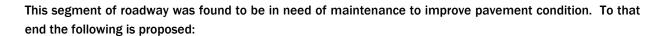
South Technology Drive

The section of South Technology Drive to a distance approximately 1,000 feet south of South Research Drive is improved due to existing adjacent development. South of this point to DPW Drive it is bounded by unimproved properties.

This segment of roadway does not meet Town of Islip standards for commercial streets and should be reconstructed in light of the proposed adjacent uses. To this end the following is proposed:

- Taking of property necessary to establish a 60 foot roadway Right-of-Way. (This was not done.)
- Construction of a 40-foot wide pavement to Town commercial standards. (This was not done.)
- Installation of curb and sidewalk on both sides for the entire length. (This was not done.)

Gullhaven Drive East of Carleton Avenue



• Resurfacing of existing pavement and other minor improvements.

Additional Consideration

Audwin Drive

In the event that the Audwin Drive development (Parcel 10) proceeds, a 20 foot taking along the east side of Audwin Drive from the Jobco site (Parcel 12) and the "Town property on Audwin Drive" (Parcel 10) to increase the ROW width should occur. With a 50 foot ROW in place a standard 34 foot pavement width could be implemented. This widening would allow the utility poles to be at an appropriate setback instead of abutting the edge of pavement decreasing the number of fixed objects along the road. With the increase ROW width, in addition to a widened pavement for both vehicles and bicyclists, curb and sidewalk can be provided on both sides of Audwin Drive for a significantly increased level of pedestrian accommodation and safety as well as vehicle and bicycle safety. (This was not done.)

Heartland Town Square – DGEIS (March 2009): "Proposed Traffic Mitigations"

Mitigation A: Commack Road at South Service Road

Although Heartland's share of the projected increase in traffic at this location is minimal, construction of a northbound right turn lane on CR 4, Commack Road adjacent to the Park and Ride lot will vastly reduce the delay experienced by northbound vehicles, especially during the PM peak period when traffic backs up as far south as Pine Hill Lane. It is the understanding of EVHB that SCDPW is contemplating a project on CR 4, Commack Road, which may include the construction of a turn lane. The developer would accept contributing a fee to Suffolk County in lieu of duplicating the construction effort for this turn lane.

Mitigation B: Commack Road and the Existing Pilgrim Site Access

In order to prevent Heartland traffic from using the existing CR 4, Commack Road entrance to Pilgrim State Psychiatric Center, the developer proposes the installation of a Card-Activated access controlled gate at this location. Access will only be available to workers, deliveries and visitors to the Psychiatric Center. All Heartland Town Square traffic will be excluded. On-site mitigation to preclude exiting traffic from Heartland Town Square to CR 4, Commack Road, will be provided.

Mitigation C: CR 13, Crooked Hill Road Underpass at the LIE

Southbound traffic on this section of CR 13, Crooked Hill Road is expected to increase significantly due to this project. Therefore, it is proposed to re-stripe CR 13, Crooked Hill Road under the LIE to provide a second southbound lane. Any traffic signal modifications required, due to the new lane configurations will be performed by the developer. There is presently sufficient room underneath the bridge to accommodate the additional lane.

Mitigation D: CR 13, Crooked Hill Road South of the LIE

CR 13, Crooked Hill Road will be widened to four lanes plus turns lanes between the LIE and the bridge over the Sagtikos Parkway. Additional ROW, if needed for this improvement, is available as part of the Islip Gateway Community Improvement Area.

Mitigation E: CR 13, Crooked Hill Road at New Zone 3 Access

A new access point will be constructed at this location. In order to provide access from the Eastbound LIE to the Heartland, it is proposed that a ramp from the LIE be constructed at this location. This new will have the added benefit of functioning as a direct access from the eastbound LIE to CR 13, Crooked Hill road, without having vehicles destined for CR 13, Crooked Hill Road from having to proceed through the CR 4/LIE intersection as they currently do.

Mitigation F: Crooked Hill Road at Existing Pilgrim Access

The Existing intersection will be reconstructed and a traffic signal installed. The eastbound approach will be expanded to two lanes exiting the site.

Mitigation G: Crooked Hill Road at Campus Road.

It is anticipated that a large number of exiting project generated vehicles will pass through this intersection to reach the northbound Sagtikos Parkway by making an eastbound left and traveling north on Crooked Hill Road to the existing northbound Sagtikos entrance ramp. As a result, it will be necessary to add a second eastbound left turn lane at this intersection.

Mitigation H: Crooked Hill road at New Zone 1 Access

This is a new signalized intersection to provide access to and from Crooked Hill Road from the development planned on the east side of Sagtikos Parkway.

Mitigation I: Sagtikos Parkway between Pine Aire Drive & Campus Road

This Location at the border of the Heartland Property, the proposed Intermodal facility, and the existing Heartland Industrial Park is an acceptable location to construct new ramps to and from southbound Sagtikos Parkway. These ramps will serve all three of the above-mentioned properties and ease congestion

at the Pine Aire Drive interchange by providing an alternate route to the industrial park. In conjunction with these ramps, a new intersection is proposed that will link the roadways to and from the three sites, including Powerhouse Road — the access road proposed by the NYSDOT to the Intermodal facility.

Mitigation J: Northbound Sagtikos Parkway at Campus Road

Since this Ramp will serve as the access to Heartland from northbound Sagtikos Parkway, it will be necessary to widen and re-align this ramp as it approaches Campus Road.

Mitigation K: Campus Road at New Zone 1 Access

A new signaled intersection and access to the proposed development site east of Sagtikos Parkway will be constructed at this location, aligning with the ramp discussed in Mitigation J above. Westbound left turns from campus road into the proposed development will be prohibited. Drivers on Crooked Hill Road wishing to enter the planned development east of the Sagtikos Parkway will use the new intersection discussed in Mitigation H.

Mitigation L: Southbound Sagitkos Parkway at Campus Road

To provide additional access to and from the southbound Sagtikos Parkway, new ramps and a signalized intersection will be constructed on the west side of the parkway. This improved access from the southbound parkway will eliminate the current practice of vehicles cutting through the Pilgrim Property to access the parkway. This measure is shown on Sheets 5 and 6 in Attachment T-28 (see Appendix M).

Mitigation M: Commack Road and Long Island Avenue

Construction of a westbound right turn lane at the Commack Road/Long Island Avenue intersection will improve operation of the intersection. Turning trucks in particular will be able to move through the intersection with less difficulty. The additional turn lane will require a right-of-way taking and the developer is receptive to providing fees to the County for this ROW acquisition and subsequent construction of the right-turn-lane and signal modification.

Further south on Commack Road, it is anticipated that intersection improvements will be necessary at Grand Boulevard. The improvements that are being considered are in conjunction with the proposed Tanger Outlet Center. These improvements (to be undertaken by others) should be designed to accommodate the additional traffic associated with the proposed action while mitigating or improving current levels of service.

Mitigation N: Pine Aire Drive at Executive Drive

Addition of a second southbound left turn lane at this intersection will ease congestion experienced by vehicles crossing south over the railroad tracks, a notorious chokepoint.

Mitigation O: Pine Aire Drive at Southbound Sagtikos Parkway Ramps

Improving the Pine Aire Drive/Executive Drive intersection, as discussed above, will not significantly improve travel time for drivers headed east on Pine Aire Drive unless conditions are mitigated at the Sagtikos Parkway ramps. Construction of an eastbound right turn lane on the approach to the southbound ramps will significantly ease congestion by helping vehicles headed to the southbound parkway to avoid waiting through traffic queuing vehicles. A right-of-way taking will be necessary to accommodate the new turn lane. The Developer is willing to provide appropriate fees to the Town of Islip to fund the required property condemnation and construction of this right-turn-lane.

Mitigation P: LIE South Service Road

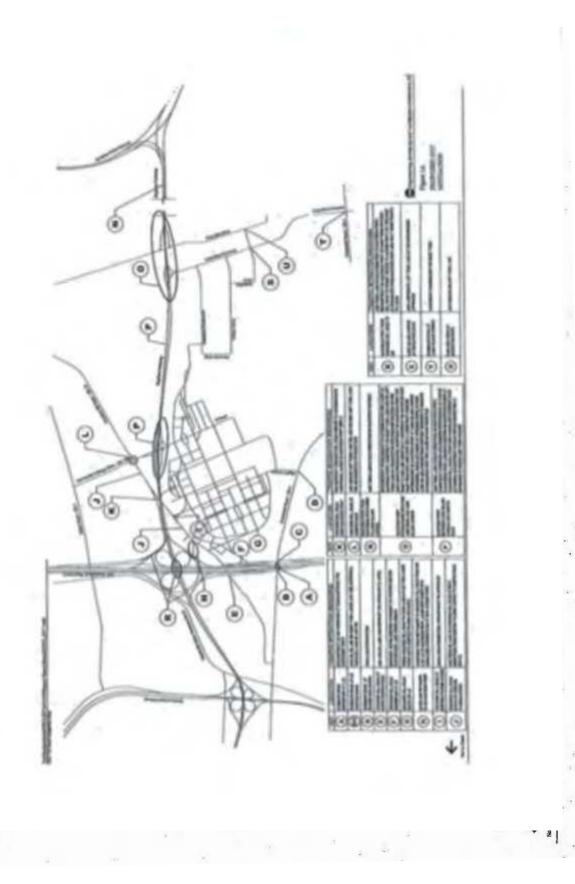
A new access point to the Heartland property is proposed off the LIE South Service Road west of Crooked Hill Road.



Heartland Town Square 2017 (Phase I) Proposed Traffic Mitigations Not Implemented

	Мар Кеу	Location	Description	Cost	Jurisdictional Responsibility	SC DPW Notations
The content of the part of t	A	Commack Road underpass at LIE	Increase width on Commack Road under LIE by reconstructing LIE (I-495) overpass		State	Ü
Part	B/C	Commack Road at LIE Service Roads		\$2,000,000	County	ü
Control	D	Commack Road at Pilgrim site access	Signalize intersection	\$1,500,000	County	Х
Content All Plane Annie Medical Plane	Е	Crooked Hill Road at North Service Road	Add one southbound lane; reconstruct westbound approach (three lanes)		County	ü
Part	F	Crooked Hill Road underpass at LIE		\$9,000	County	ü
	G	Crooked Hill Road south of LIE	Widen Crooked Hill Road to four lanes plus turn lanes from LIE to existing Pilgrim entrance	\$4,500,000	County	ü
	Н	to southbound Sagtikos Parkway to allow trucks		\$13,000,000	State	Х
Concept Recent	I	Crooked Hill Road at existing Pilgrim Access	Signalize intersection; reconstruct eastbound approach to intersection	\$1,500,000	County	Х
	J			\$4,000,000	County	ü
No Sagikes Patway from Southern State Parkay to Long Jased A Menius Deglace I Designed Parkay to Journal Long Jased A Menius Deglace I Designed Parkay to Journal Long Jased A Menius Designed Designed Parkay to Long Jased A Menius Designed Long Jased Jased A Menius Designed Long Jased Jased A Menius Designed Long Jased Jased Long Jased A Menius Designed Long Jased Jased Jased Jased Jased	К	Crooked Hill Road over Sagtikos Parkway			State	ü
In In In In In In In In	L	Crooked Hill Road at Campus Road	Add second left turn lane northbound; add second left turn lane westbound; Reconstruct intersection	\$5,000,000	County	ü
In the and Long Island Avenue thanks of Carrier Information Significant Pathway in Carrier Information Significant Pathway in Long Island Avenue from the Path Pathway in Long Island Avenue from the Path Pathway in Long Island Avenue from the Pathway in Long Island Avenue from the Pathway in Long Island Avenue from the Long Island Avenue and Experimental Information Island Islan	N		Add third lane in each direction on Sagtikos Parkway	\$36,000,000	State	ü
and Campus Road Garque Road	0		turn lane and westbound left turn lane in conjunction with reconstruction of Pine Aire Drive inter- change. Construct northbound Sagtikos off ramp to Pine Aire Drive only; construct southbound Sagtikos on ramp from Pine Aire Drive only. Construct Diamond Interchange on Sagtikos Parkway at Long Island Avenue (Extended). Signalize ramps at intersections. Extend Long Island Avenue from	\$20,000,000	State	ü
Solition of Long Island Avenue and Executive Drive Intersection of Long Island Avenue and Executive Drive Intersection of Long Island Avenue and Executive Drive Individual Solition of Long Island Avenue and Executive Drive Individual Solition of Long Island Avenue and Executive Drive Individual Solition of Long Island Avenue and Executive Drive Individual Solition of Long Island Avenue and Executive Drive Individual Solition of Long Island Avenue Individual Solition of Long Island Avenue Individual Solition Individual Individual Solition Individual Solition Individual Solition Individual Solition Individual Solition Individual	Р		at G Road & Sagtikos Parkways; Abandon existing northbound Sagtikos Ramps at Crooked Hill	\$30,000,000	State	ü
To Commack Road at Long Island Avenue Construct channelized westbound right turn lane S1,500,000 County 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	Sagtikos Parkway from Crooked Hill Road to LIE		\$20,000,000	State	Ü
U Pine Aire Drive at Executive Drive Add second southoound left turn lane \$15,00,000 Town of Isign \$1 \$1,000,000 Town of Isign \$1,000,000	S		Add a separate left turn lane for the southbound approach	\$500,000	County	ü
Total Subtotal Subtotal Subtotal Sites, Occurring Subtotal Subtota	Т	Commack Road at Long Island Avenue	Construct channelized westbound right turn lane	\$1,500,000	County	ü
Subtotal Subtotal Subtotal S159,000,000 State Subtotal Subtotal S21,209,000 County Subtotal Subtotal S1,500,000 Town SC DPW Notations: SC DPW Notations: The above-listed "SC DPW Notations" were provided by SC DPW (8/27/12) regarding the CLI-CR4 Study: \$\frac{1}{2}\$ Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square \$X = Proposed mitigations which should be completed by the developer of Heartland Town Square size improvements and not as part of the CLI-CR4 Study General Notes: 1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission	U	Pine Aire Drive at Executive Drive	Add second southbound left turn lane	\$1,500,000	Town of Islip	ü
Subtotal Subtotal Subtotal Subtotal Subtotal Subtotal SC DPW Notations: SC DPW Notations: The above-listed "SC DPW Notations" were provided by SC DPW (8/27/12) regarding the CLI-CR4 Study: "= Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square X = Proposed mitigations which should be completed by the developer of Heartland Town Square 3. This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission			Total	\$181,709,000		
Subtotal Subtotal Subtotal Subtotal Subtotal Subtotal SC DPW Notations: SC DPW Notations: The above-listed "SC DPW Notations" were provided by SC DPW (8/27/12) regarding the CLI-CR4 Study: "= Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square X = Proposed mitigations which should be completed by the developer of Heartland Town Square 3. This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission			Cubindral	\$150,000,000	Ctata	
Subtotal Subtotal \$1,500,000 Town SC DPW Notations: The above-listed "SC DPW Notations" were provided by SC DPW (8/27/12) regarding the CLI-CR4 Study: = Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square X = Proposed mitigations which should be completed by the developer of Heartland Town Square as site improvements and not as part of the CLI-CR4 Study General Notes: 1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission						
SC DPW Notations: The above-listed "SC DPW Notations" were provided by SC DPW (8/27/12) regarding the CLI-CR4 Study: ü = Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square X = Proposed mitigations which should be completed by the developer of Heartland Town Square as site improvements and not as part of the CLI-CR4 Study General Notes: 1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission						
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ü = Proposed mitigations which should be included in the CLI-CR4 Study and are not proposed to be completed by the developer of Heartland Town Square X = Proposed mitigations which should be completed by the developer of Heartland Town Square as site improvements and not as part of the CLI-CR4 Study General Notes: 1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission	SC DPW Notations:					
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General Notes: 1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission	ü = Proposed mitigations whi	ich should be included in the CLI-CR4 Study and a	are not proposed to be completed by the developer of Heartland Town Square			
1) This Updated List of Proposed Mitigations by VHB was prepared July 2012 2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission	X = Proposed mitigations w	hich should be completed by the developer of H	eartland Town Square as site improvements and not as part of the CLI-CR4 Study			
2) This Updated List was provided to SC DPW and not referred to the Suffolk County Planning Commission	General Notes:					
	1) This Updated List of Propose	ed Mitigations by VHB was prepared July 2012				
3) SC DPW indicated the above "cost" adjustments (in italics) on 8/27/12	2) This Updated List was provide	ded to SC DPW and not referred to the Suffolk Co	ounty Planning Commission			
	3) SC DPW indicated the above	"cost" adjustments (in italics) on 8/27/12				

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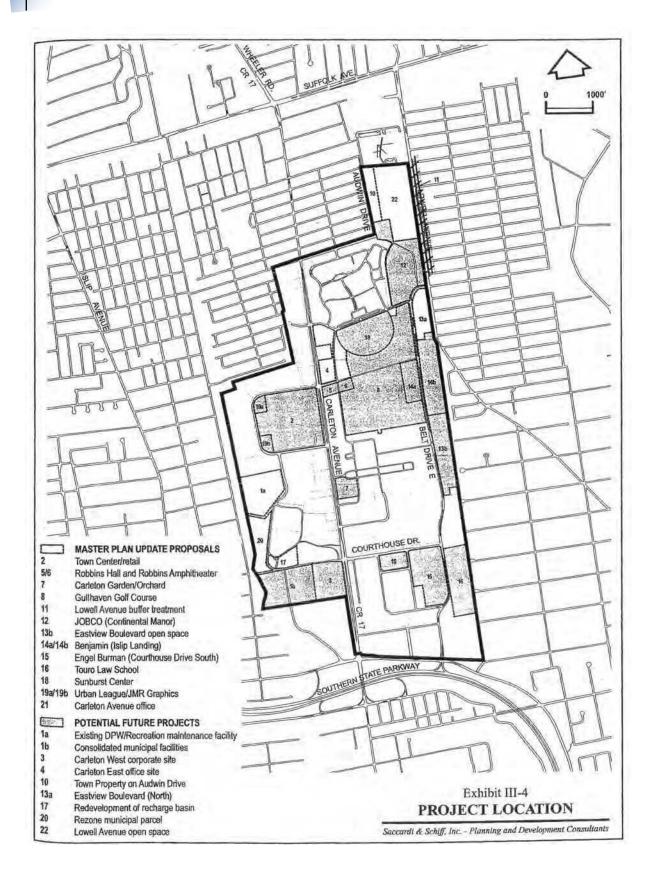




Table III-1 Project Summary Table

Name	1 (1) L	Type	Госайон	Number of Residential Units	Acreage	Parking Max. Requirement Feet	Max, Square Feet	Current Zoning	Proposed Zoning	Project Status
Existing DPW site, consolidation to south of DPW Drive	OPW site, tion to OPW	Municipal Yard	West side of South Technology Drive	٥	14.88	1,232 spaces (1/200 s.f.)	246,306 (0.38 FAR)	PDD- MUN	PDD-RI	Future Consideration
South side Drive site	South side of DPW Drive site	Municipal Yard	South side of DPW Drive	0	22.99	n/a	n/a	PDD- MUN	PDD- MUN	Future Consideration
Town Center	nter	Retail	West side of Carleton Ave, between North and South Research PI.	0	32.8	1,803 spaces proposed	309,296 (0.22 FAR) proposed	PDD-RS	PDD-RS	Pending Application
Carleton west corporate site	west site	Office/ Industrial	Southwest corner of DPW Dr. and Carleton Ave.	0	9.11	397 spaces (1/200 s.f.)	79,366 (0.20 FAR)	PDD- MUN	PDD-RI	Future Consideration
Carleton NYIT	Carleton East Site - NYIT	Education Open Space	North side of Gullhaven Drive between Carleton Avenue and Robbins Road	0	арр. 6.0	To be determined	The President's Building and chapel - 14,100 s.f.	PDD-EC	PDD-EC	Town/NYIT Proposal
Robbins Hall Robbins Amphitheater	Robbins Hall & Robbins Amphitheater	Renovation of existing structures	Southwest and east corners of Robbins Rd. and Gullhaven Dr.	0	Robbins Hall - 2.8, Amp1.9	To be determined	Robbins Hall - app. 121,400	PDD-EC	PDD-EC	Town/NYIT Proposal

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Master Plan Update for the Central Islip Planned Development District



Program for Development of the Master Plan Site

ġ.	Name	Type	Location	Number of Residential Units	Acreage	Parising Requirement	Mar. Square Gurrent Feet Zoning	Current Zoning	Proposed Zoning	Project Status
7	Carleton Garden / Orchard	Reconstruction of former gardens	East side of Carleton Ave., south of Admission Dr.	0	арр. 4.0	n/a	n/a	PDD-EC	PDD-EC	Town/NYIT Proposal
00	Gullhaven Golf Course	Improvements to golf course	South and north sides of Gullhaven Dr.	0	65.5, including addition	n/a	n/a	PDD-EC	PDD- MUN	Town Proposal
10	Audwin Drive	Townhouses	East side of Audwin Dr.	32	4	64 spaces	n/a	PDD- MUN	PDD-MF	Future Consideration
11	Lowell Avenue buffer treatment	Site Improvement	West side of Lowell Ave.	0	± 2,000 linear feet	n/a	n/a	n/a	n/a	Town Proposal
12	JOBCO (Continental Manor)	Flats and townhouses	North side of Sunburst, west of Lowell Ave.	284 (92 senior)	25.03	568 spaces	1,200/unit	PDD-EC	PDD-MF	Pending Application
13a	North site on east side of Eastview Boulevard	Educational open space and fire substation	East side of Eastview Boulevard	0	12.0	To be determined	To be: determined	PDD-EC	PDD-EC	Town Proposal
136	South site on east side of Eastview Boulevard	Vacant / no change	East side of Eastview Boulevard	. 0	14.8	n/a	n/a	PDD-EC	PDD- MUN	Town Proposal
14a/ 14b	Benjamin (Islip Landing)	Flats and townhouses	East and west sides of Eastview Boulevard	225 (69 senior)	22.57	450 spaces	condos - 1,150/unit townhouses - 1,900/unit	PDD-EC	PDD-MF	Pending Application

Master Plan Update for the Central Islip Planned Development District

Program for Development of the Master Plan Site

	Nime,	Type	Escation Section 1	Number of Residential Units	Acresige	Parking Max Requirement Feet	Wax Square Current Feet Zoning	Current Zoning	Proposed Zoning	Project Status
15	Engel Burman (Courthouse Drive South)	Flats	Southwest corner of Courthouse Dr. and Eastview Boulevard	252 (72 senior)	21.34	504 required, 660 proposed	1,200/unit	PDD-EC	PDD-MF	Pending Application
16	Touro Law Center	Law School	Eastview Boulevard, south of Courthouse Dr.	0	15.48	555 spaces proposed	197,000 proposed 242,750 permitted	PDD- MUN	PDD-EC	Pending Application
17	Redevelopment of Recharge Basin	Research/ Industrial	North side of DPW Dr.	0	3,68	To be determined	60,914 (0.38 FAR)	PDD- MUN	PDD-RI	Future Consideration
18	Sunburst Center	Townhouses and rental flats	South side of Sunburst, east of Robbins Rd.	96 (40 rentals)	20.14	To be determined	1,200/unit	PDD-EC	PDD-MF or PDD- EC	Future Consideration
19a	Rezone Urban League Parcel	Office, daycare, classrooms	Northeast corner of Research Place	0	2.00	88 spaces (1/200 s.f.)	17,424 (0.20 FAR)	PDD-RS	PDD- OFF	Approved
196	Rezone JMR Graphics Parcel	Research- Industrial	Southeast corner of Research Place	0	1.75	145 spaces (1/200 s.f.)	28,967 (0.38 FAR)	PDD-RS	PDD-RI	Approved
20	Rezone Municipal Parcel to PDD-RI	Research- Industrial	West side of S. Technology Drive	n/a	10.00	To be determined	165,528 (0.38 FAR)	PDD- MUN	PDD-RI	Town

Master Plan Update for the Central Islip Planned Development District

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fax. Square Current Proposed Project Eef Zoning Zoning Status	28,488 PDD- PDD- Pending site plan OFF OFF application	To be PDD- PDD- NYSDEC site determined MUN MUN evaluation to
Parking T	76 spaces	To be determined
Acreage	0.92	26.00
Number of Residential	0	0
Docum	West side of Carleton, north of the Central Islip Little League fields	Southwest corner of Lowell Avenue and Clayton
Type	Office	Municipal Open Space
Name	Office Development Office at 267 Carleton Avenue	Town parcel at the southwest corner of Lowell Ayenue and
No.	21	22

Master Plan Update for the Central Islip Planned Development District

DEVELOPMENT AREA STU SAGTIKOS REGIONAI

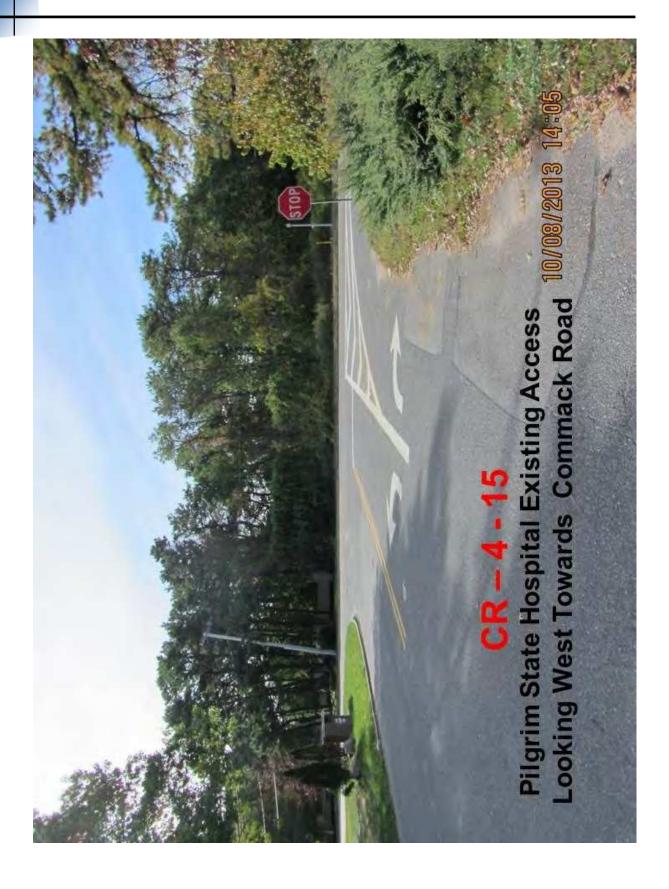
LOCATION PHOTOS OF PHASE

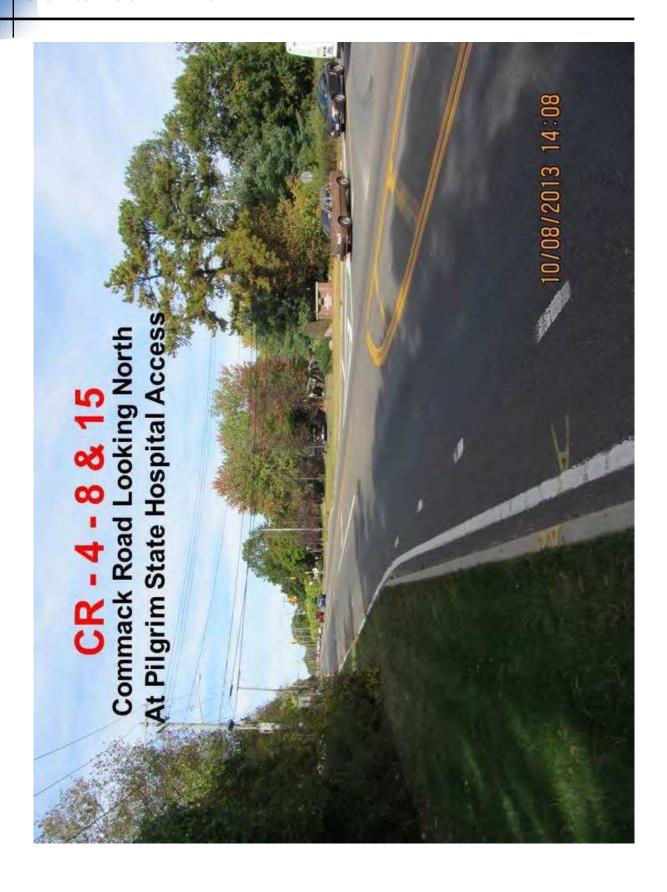
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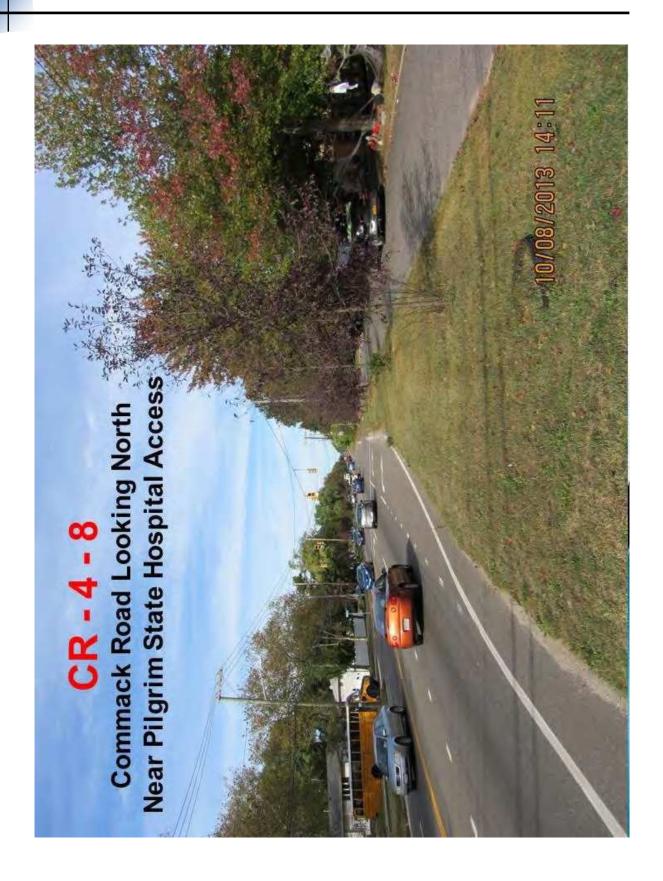


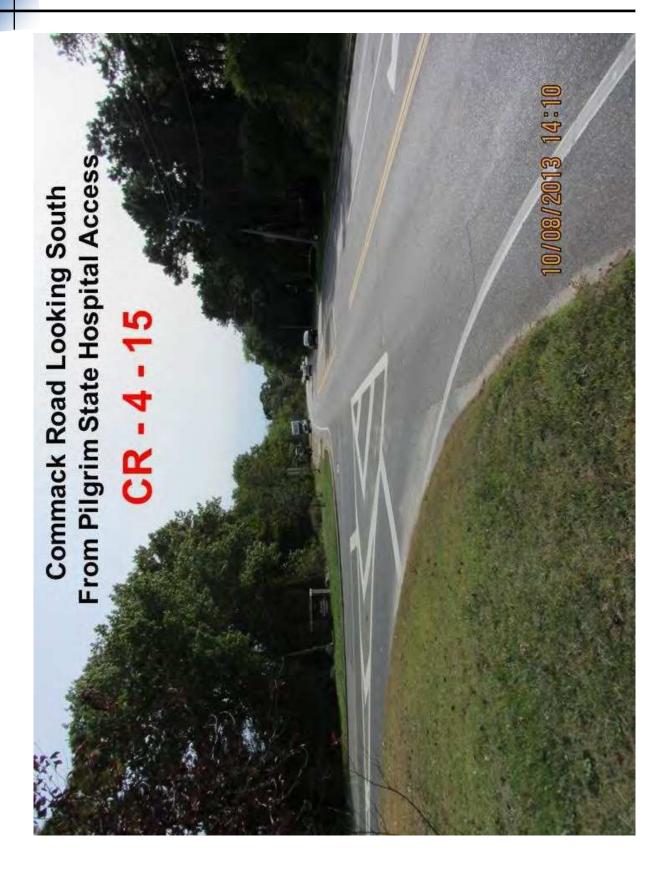


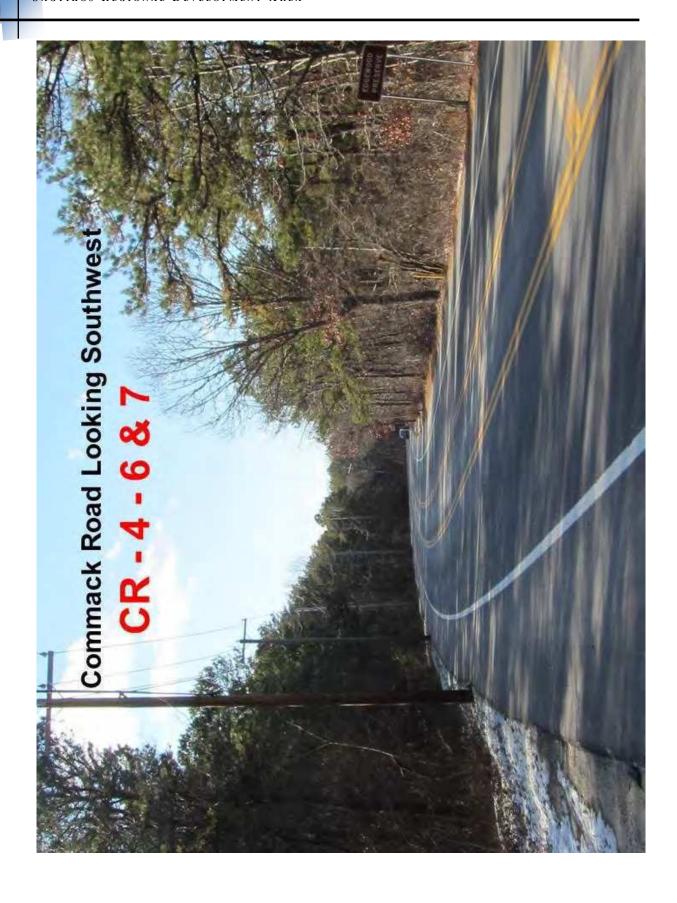


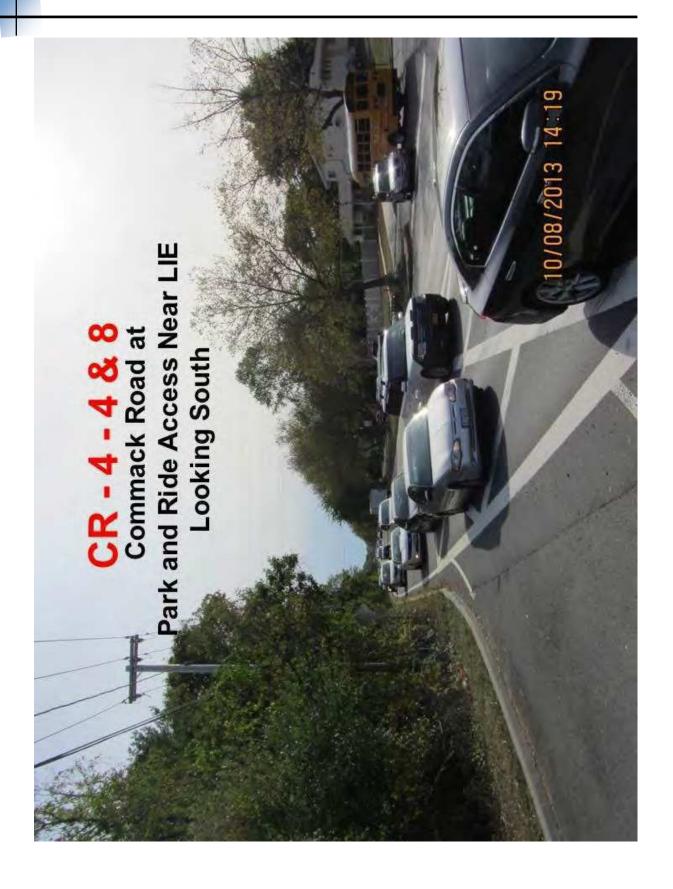


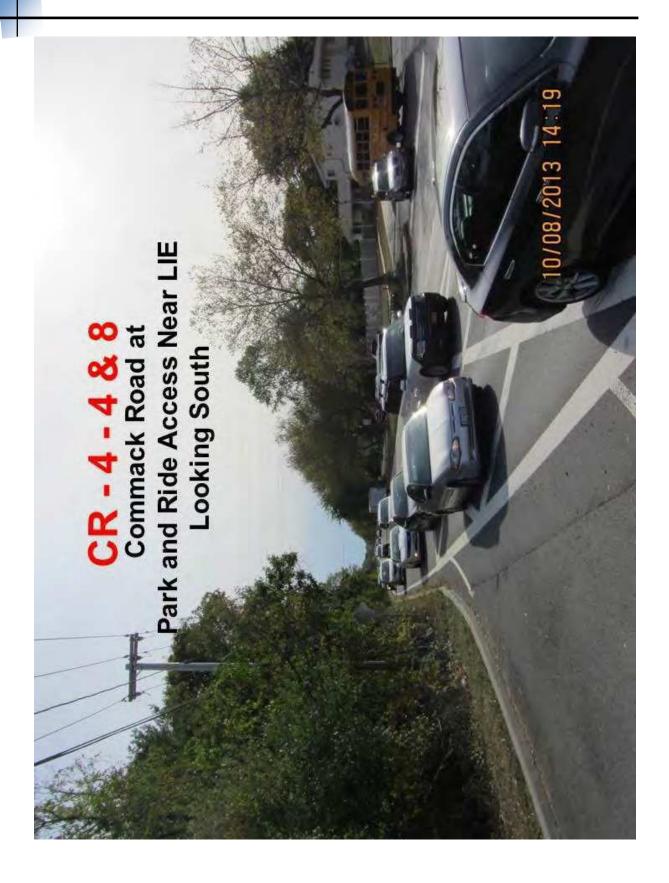






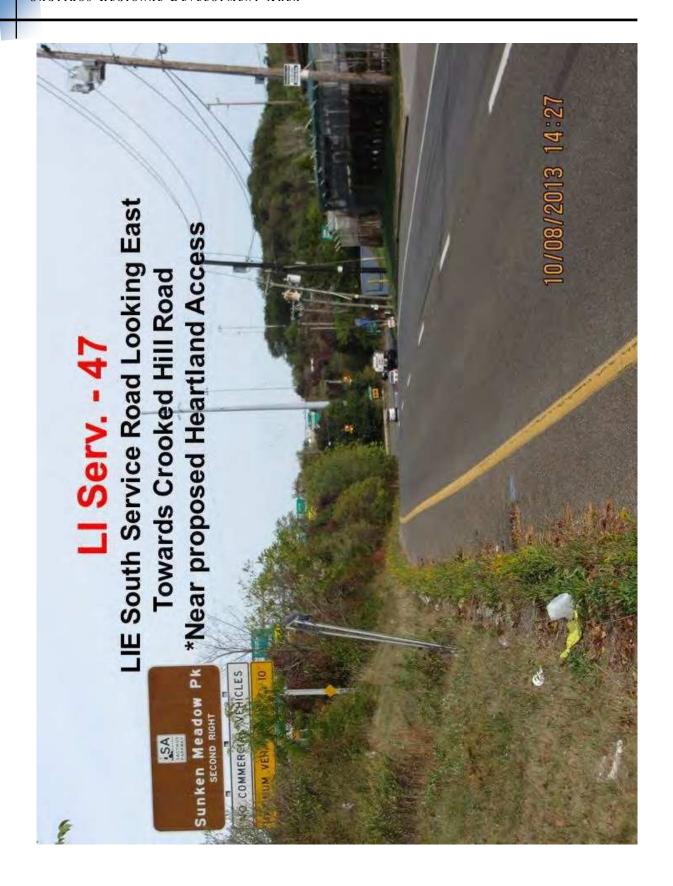


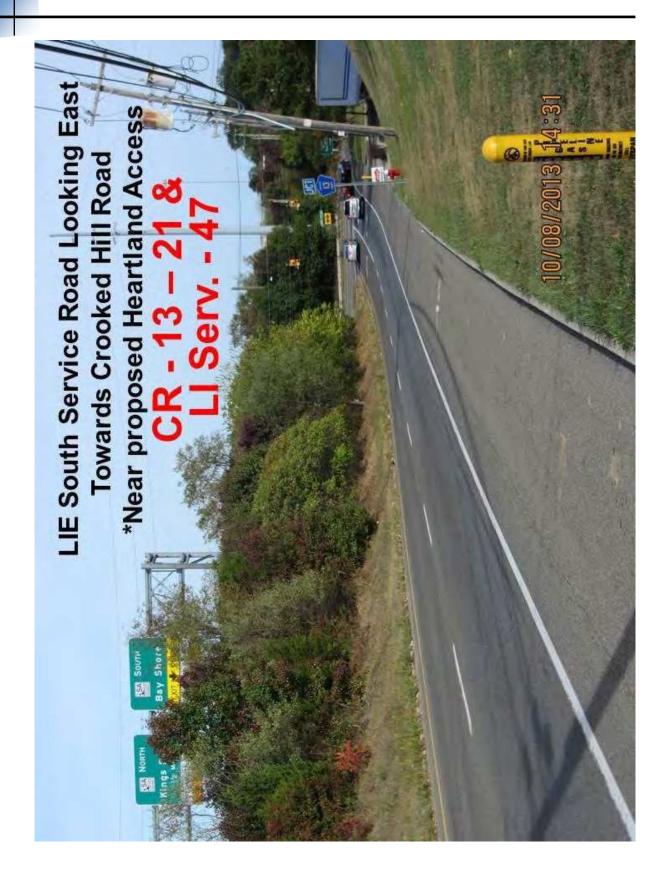


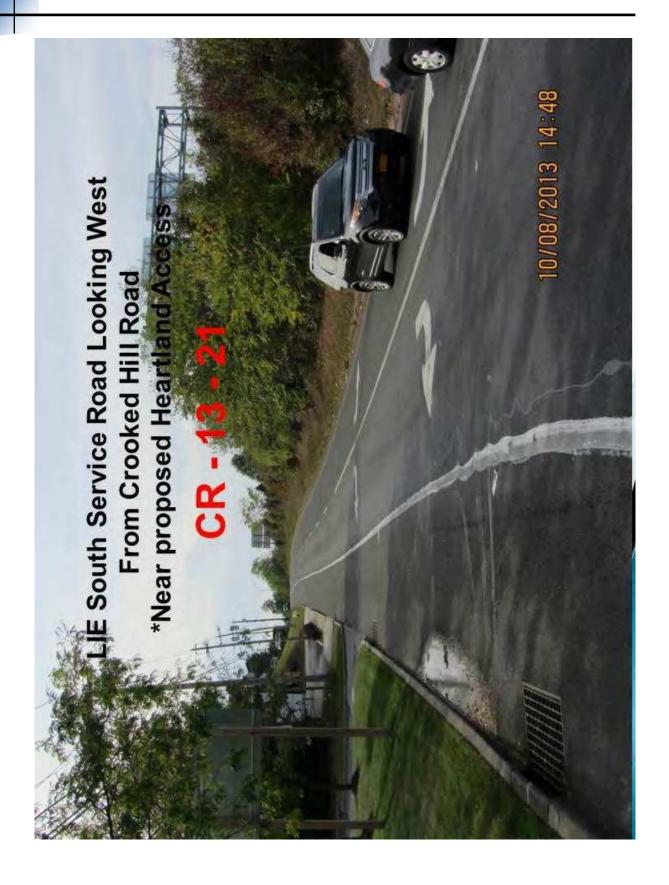


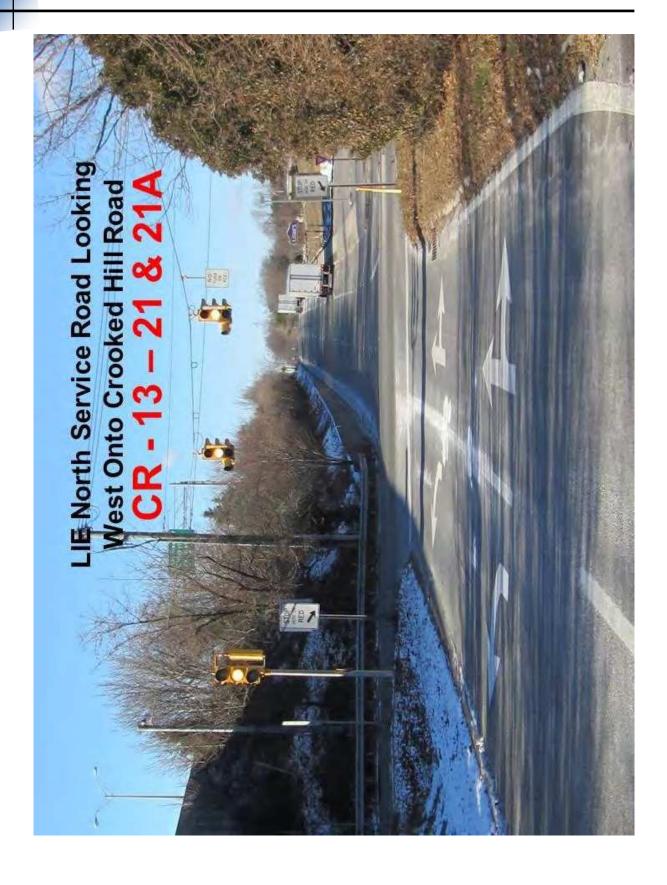


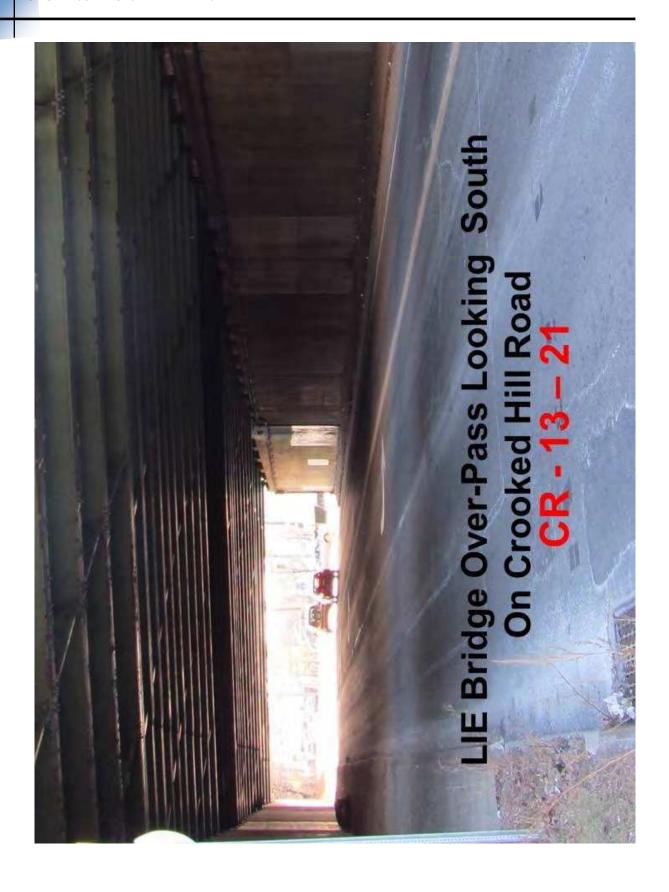


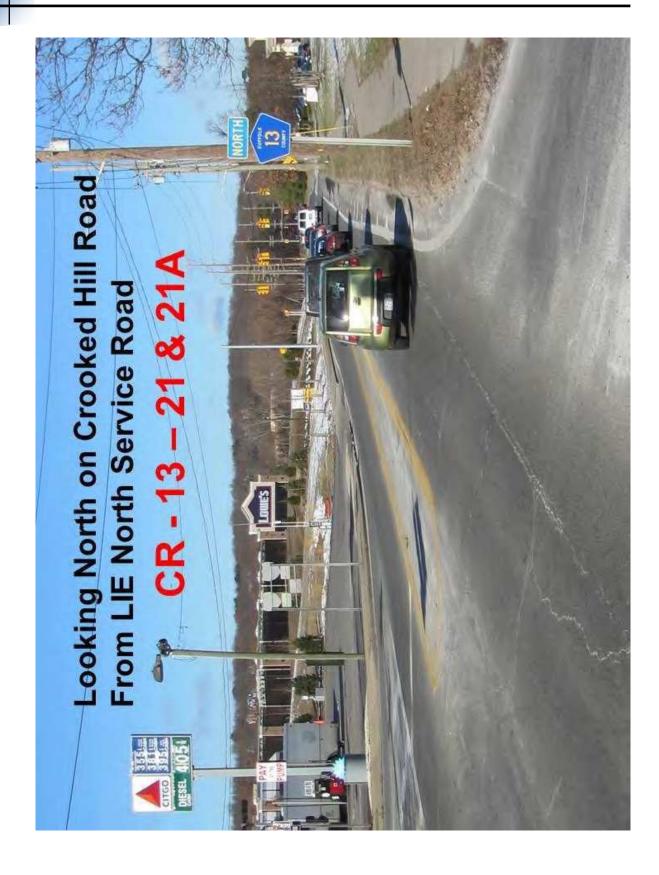


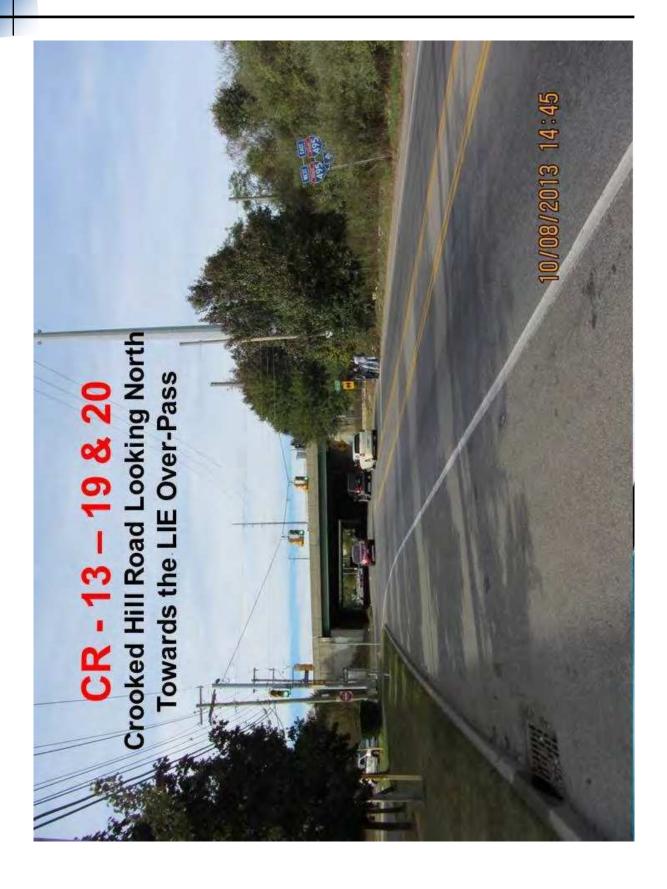


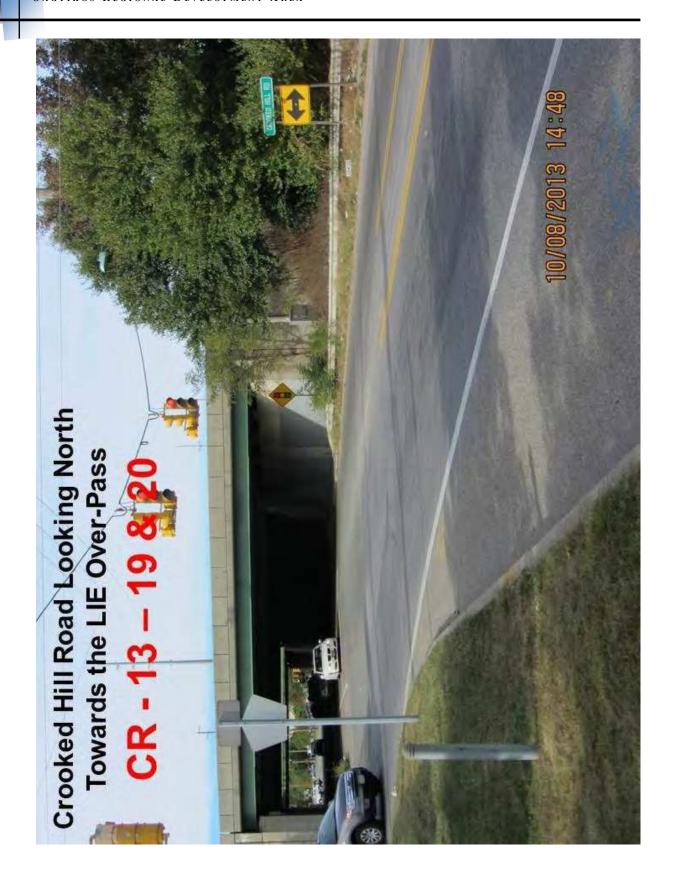




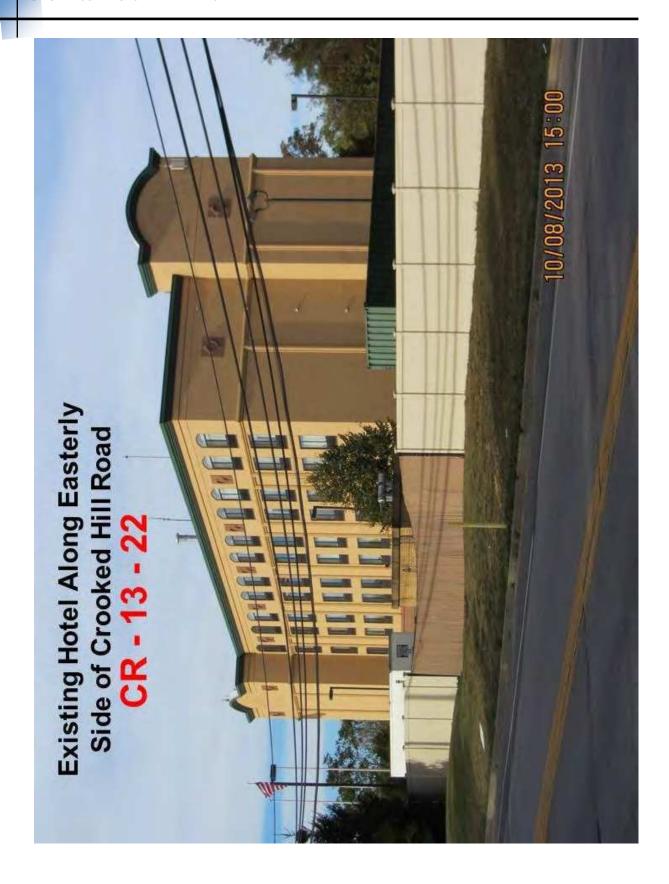


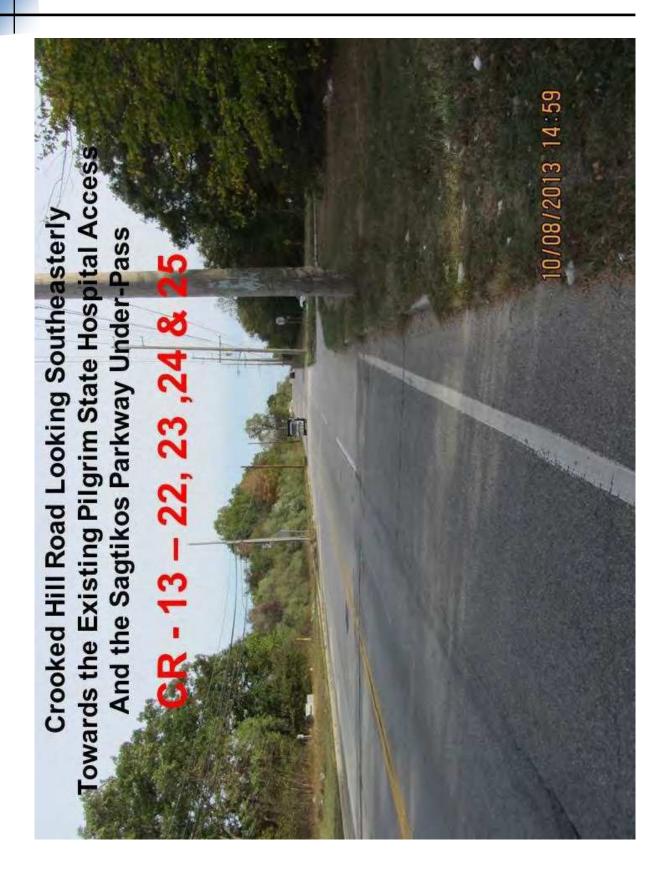


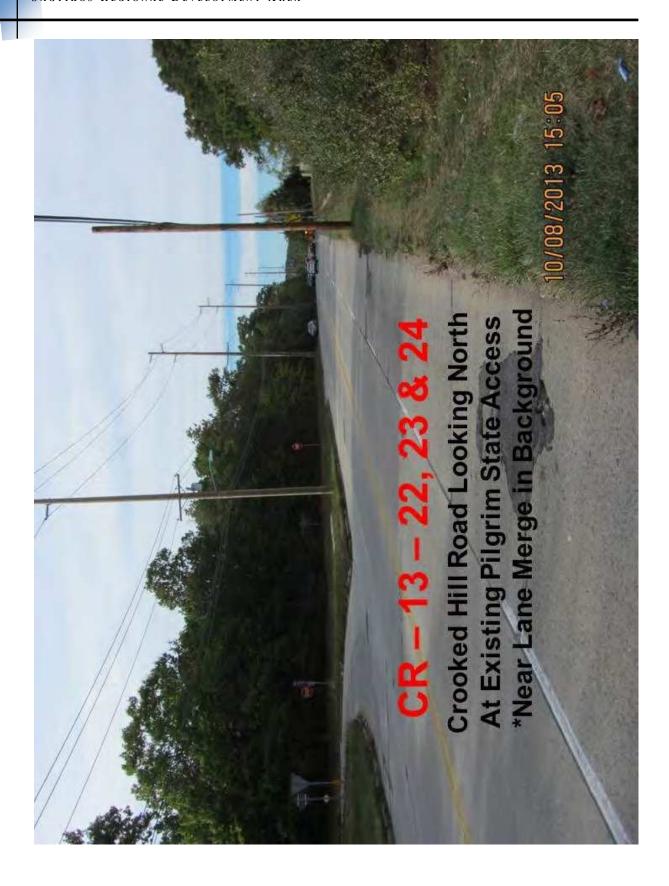






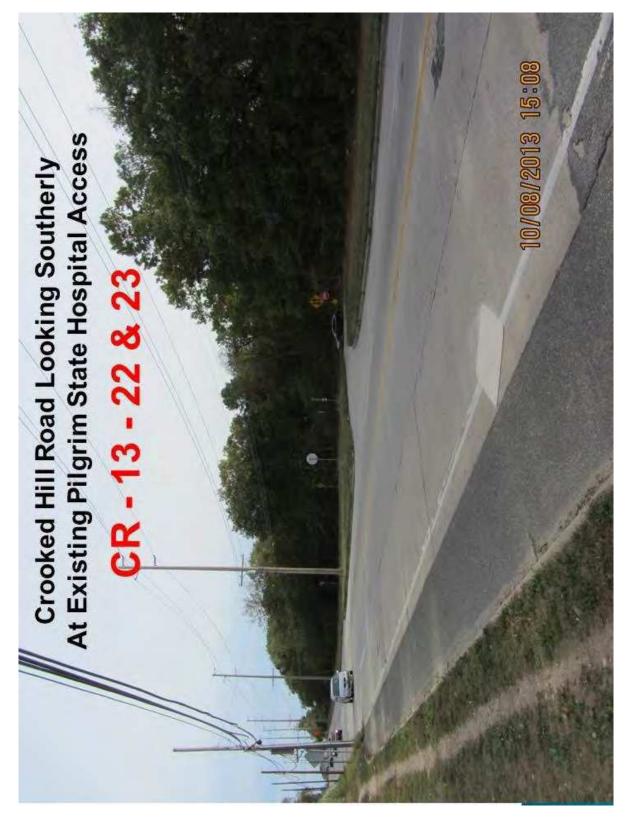


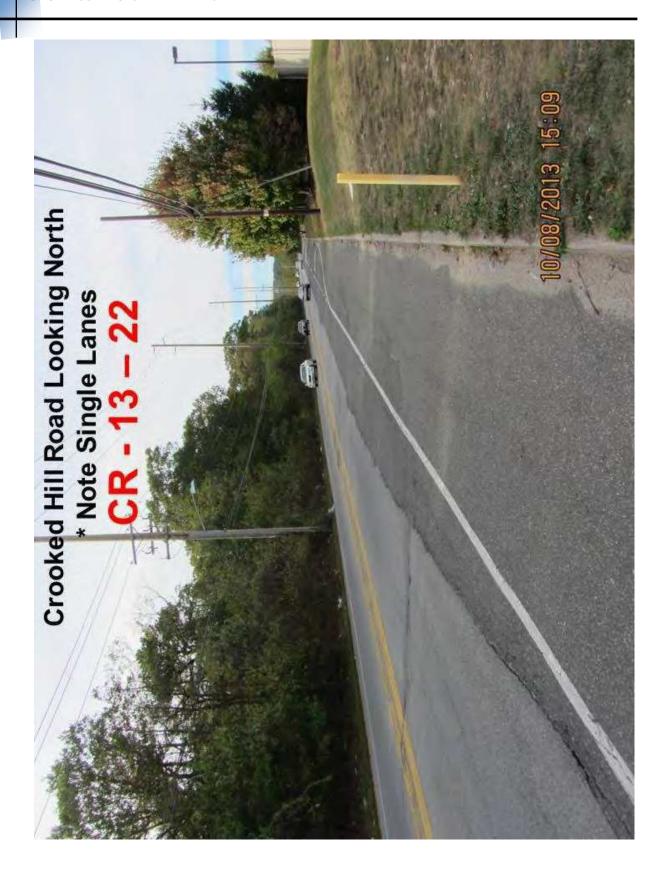




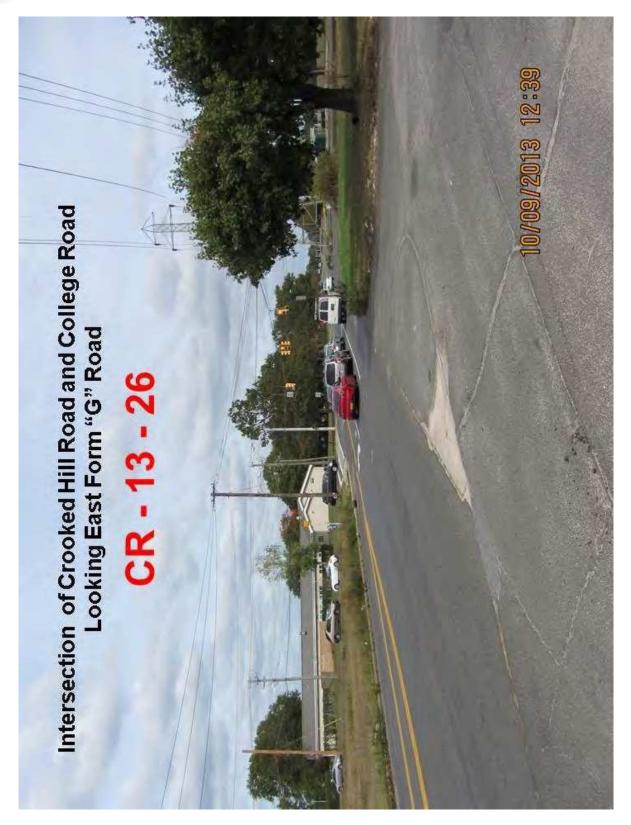


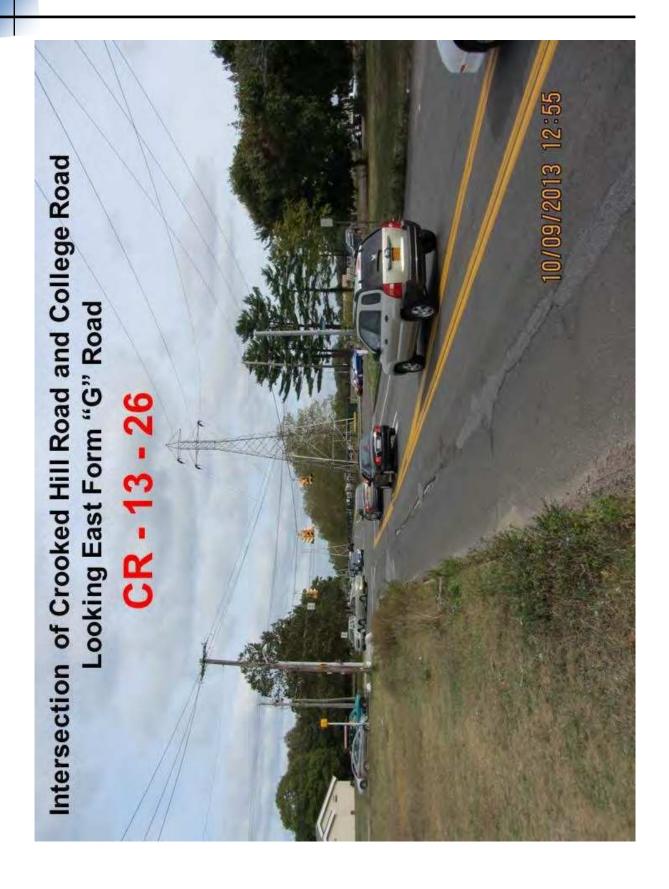




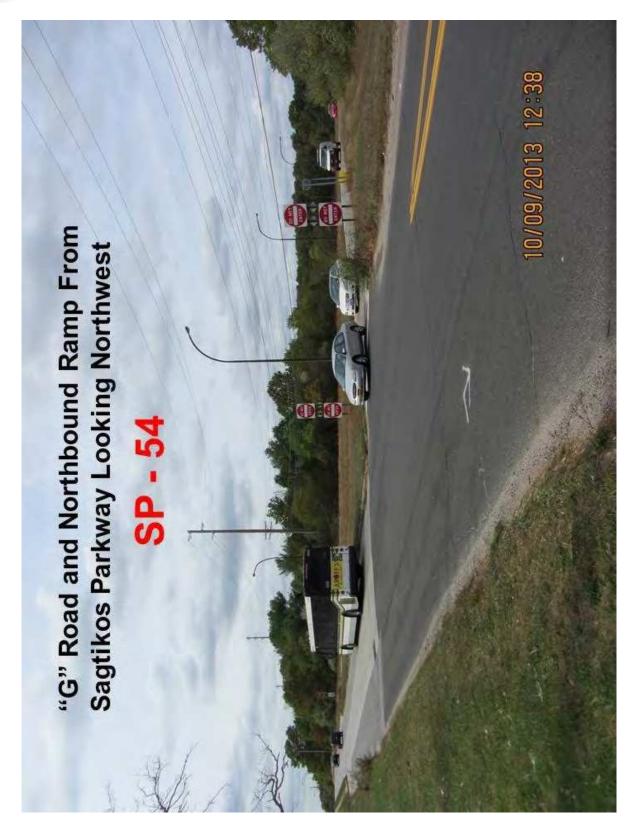


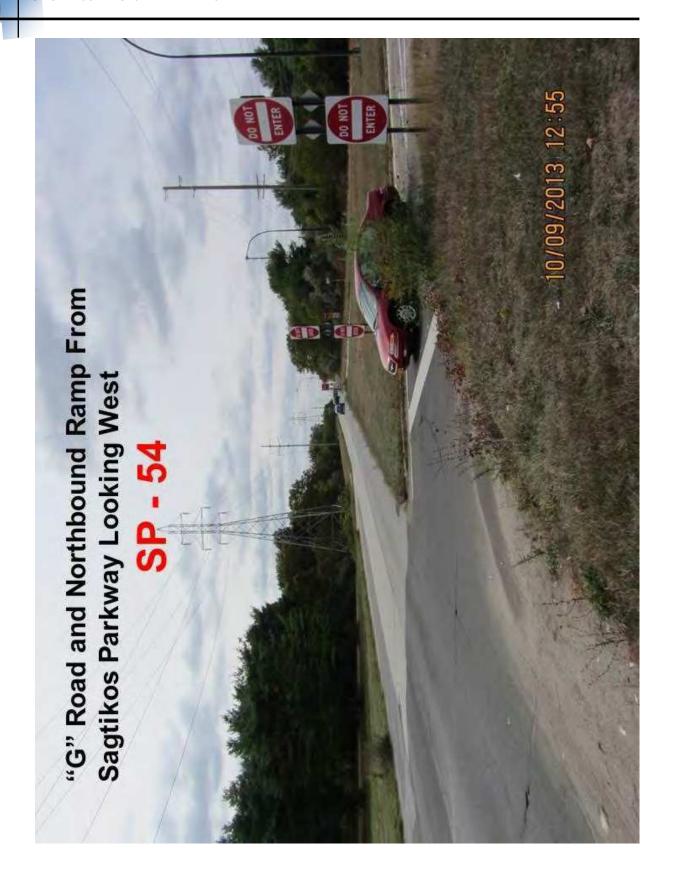


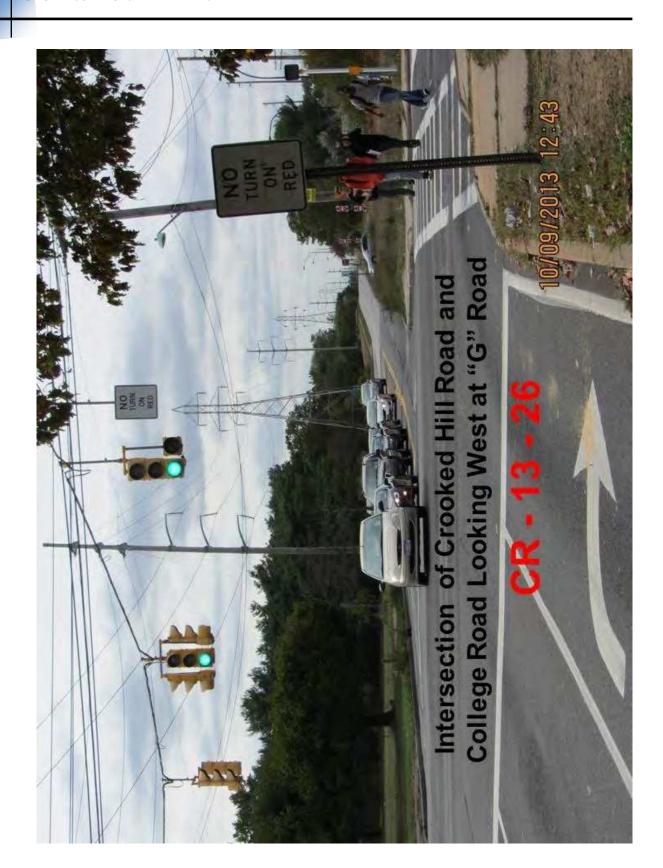


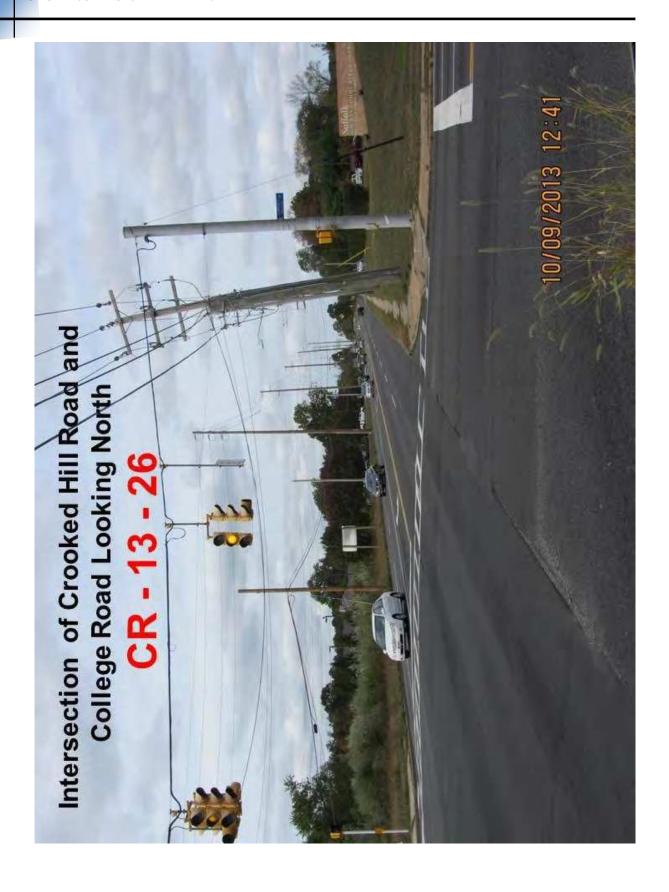




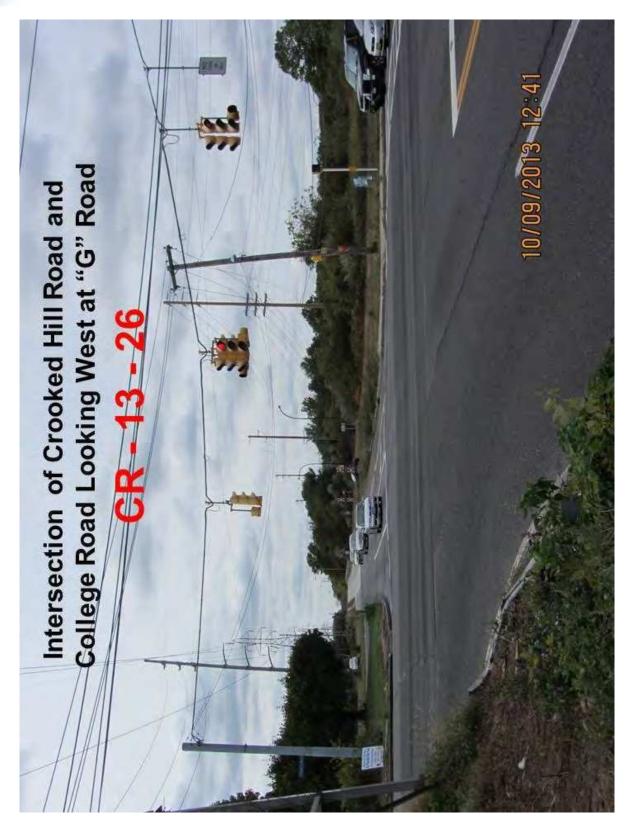


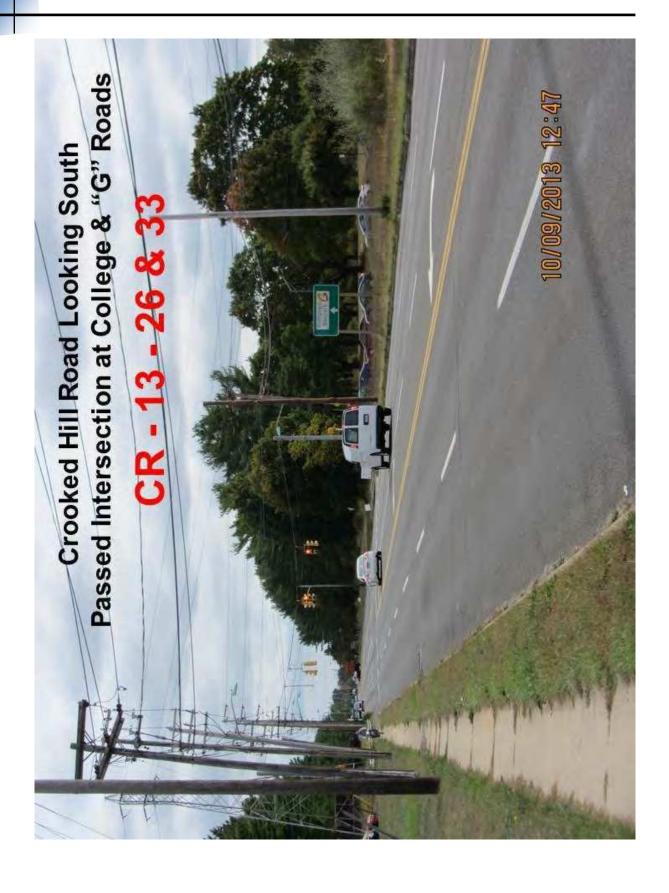


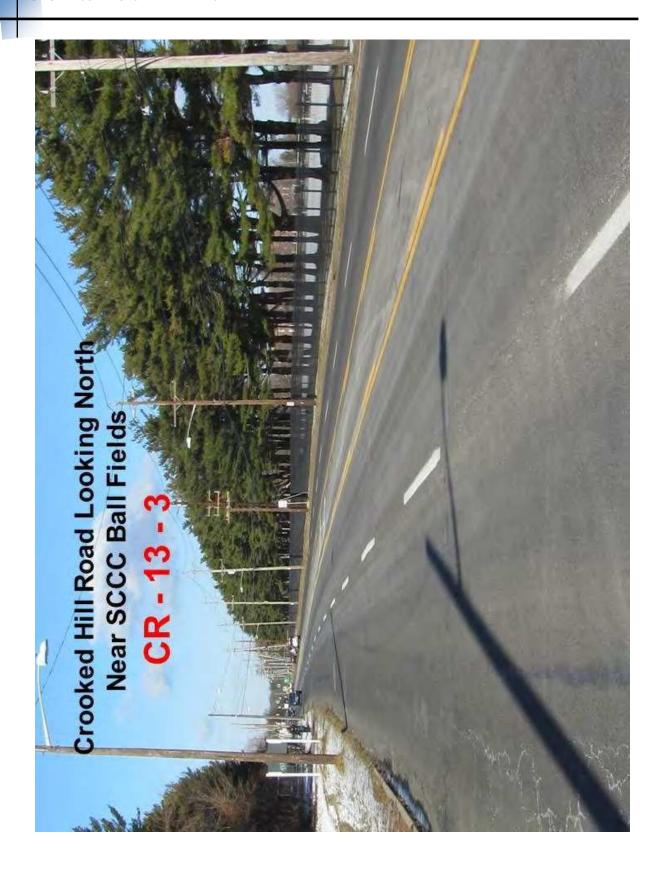


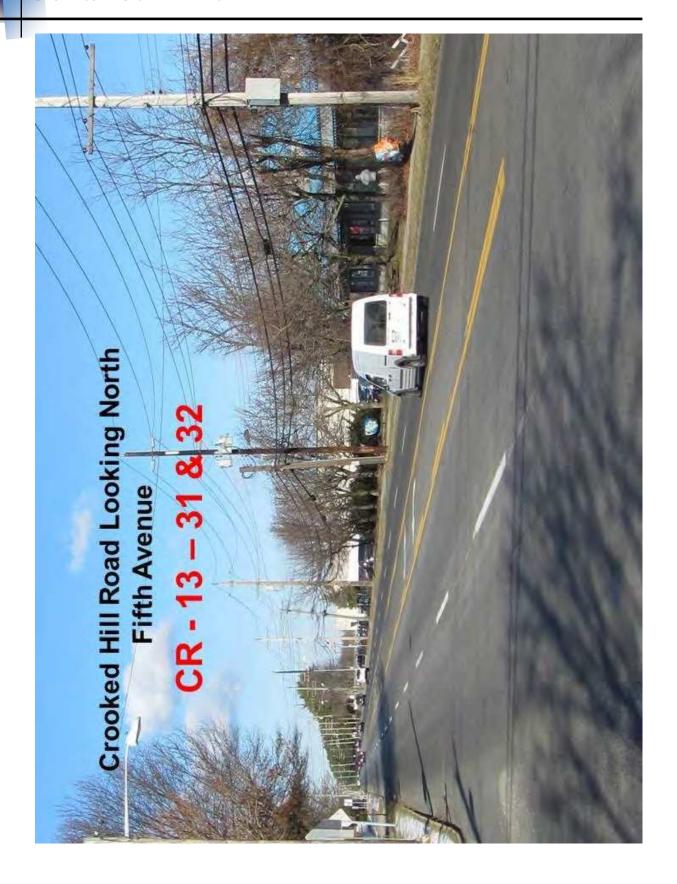


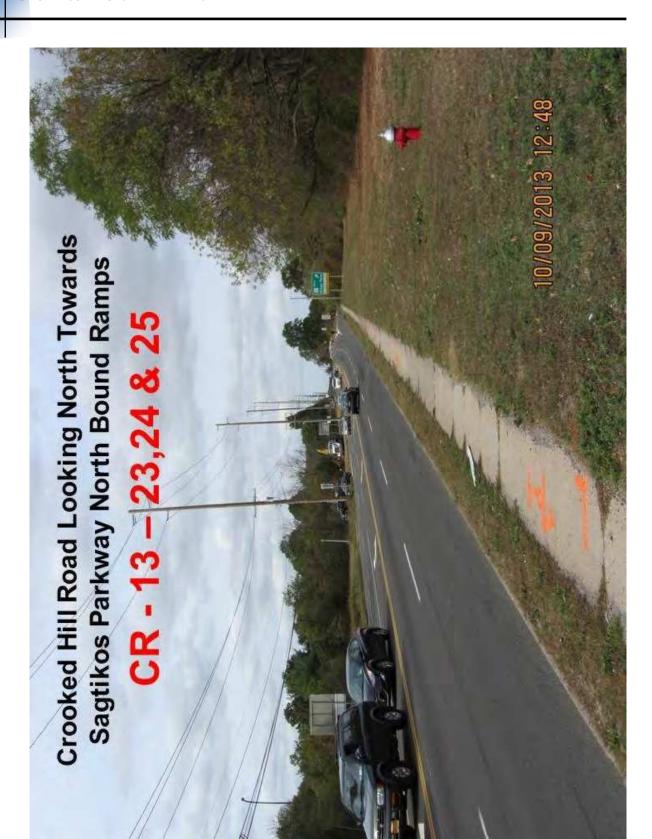




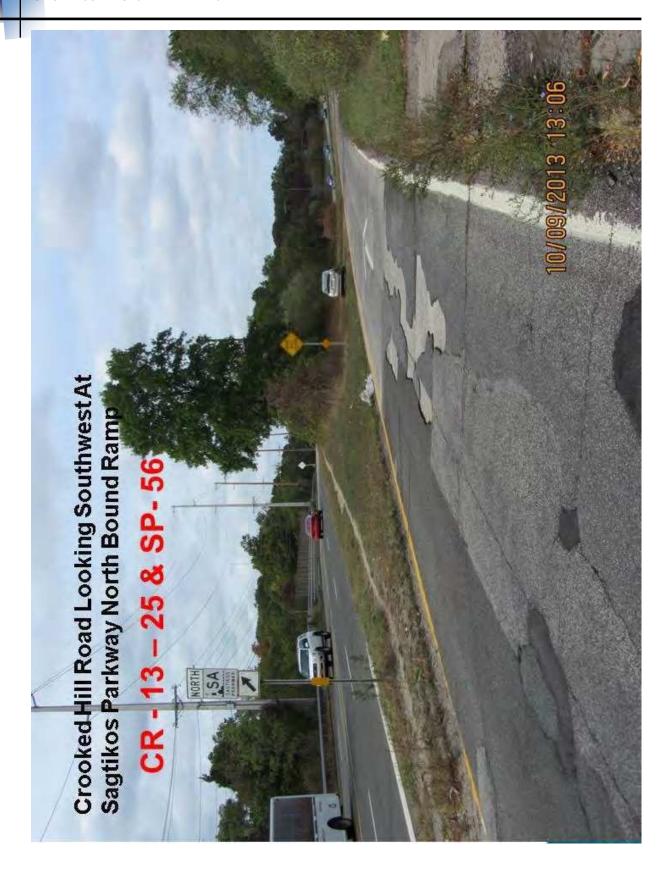


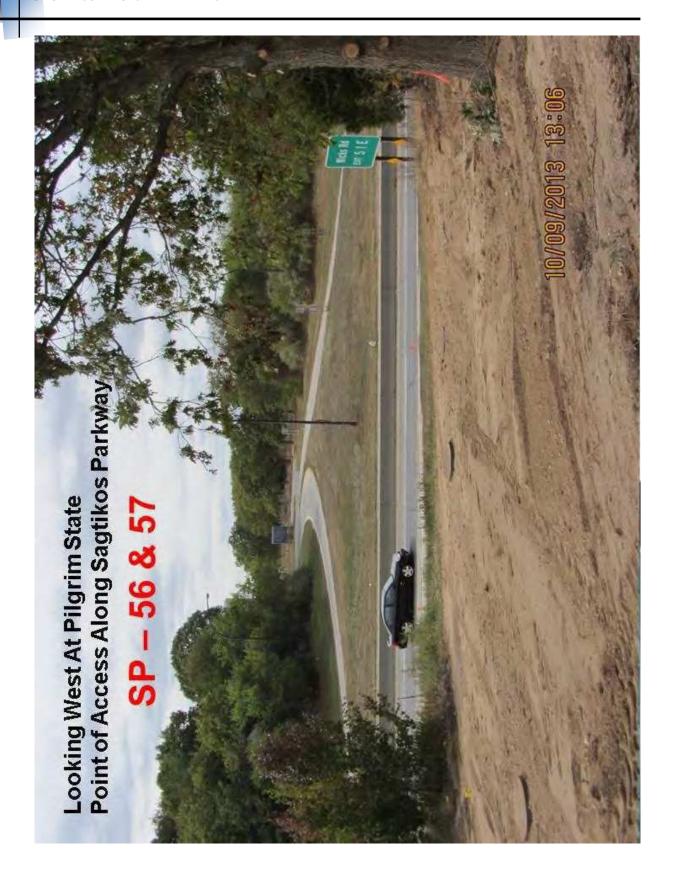




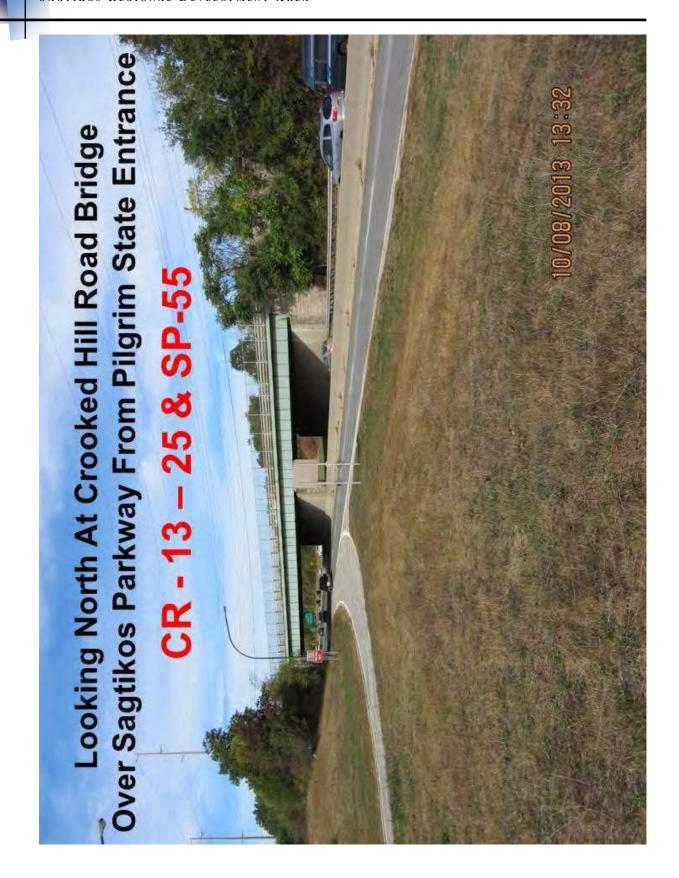


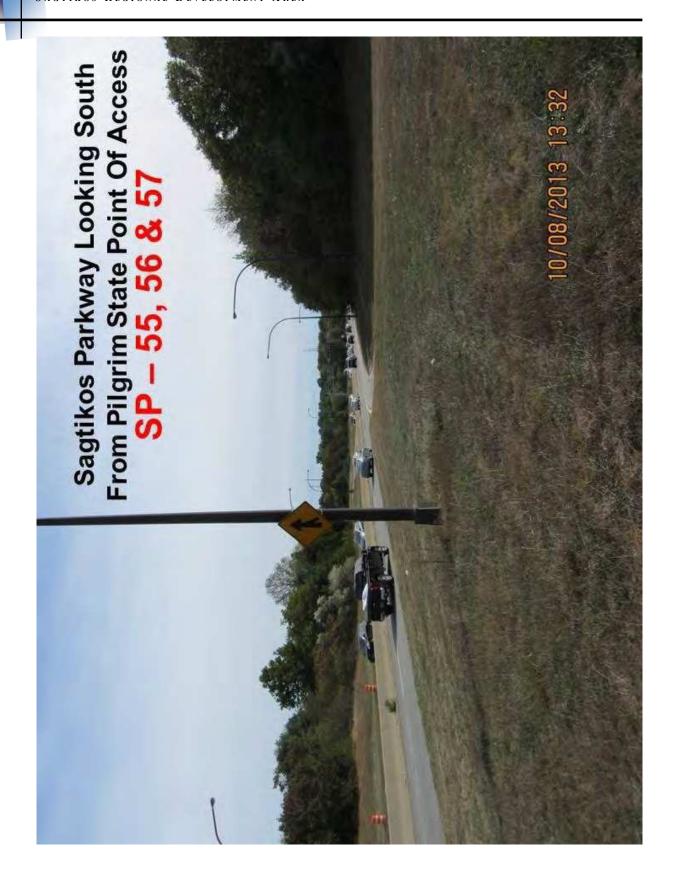












CR 4, Commack Rd Permit Projects Since 2001

Approval Date	9/28/2000	1/6/2005	10/6/2004	5/3/2005	6/15/2005	2/15/2011
Date Issued	5/15/2000	1/13/2003	10/15/2003	12/21/2004	4/28/2005	12772007
Work Description	Build 55' wide commercial roadway type access . Remove existing access. Install 200' of: concrete curbing with handicap ramps, full depth (6') asphalt pavement and required roadway drainage modifications. Install thermoplastic pavement markings. Install a traffic signal with interconnect. Replace all broken sidewalk.	Build 28' wide commercial street type access with 6" asphalt pavement and concrete curbs. Build a 16' right in, 16' right out access with a concrete directional island and handicap ramps. Install 100' of 5' wide concrete sidewalk Install required roadway signage. Install thermoplastic pavement markings as directed. Install a traffic signal with spread spectrum interconnect from New Highway to Daly Rd. Replace all broken sidewalk at completion of project.	Build new 35' wide commercial drop curb with reinforced concrete apron & 5' wide sidewalk section. Remove 2 existing accesses. Install 100' of 5' wide concrete sidewalk. Install "Stop" sign @ intersection of access and county road	Remove existing northerly access on CR 4 and install concrete curb. Narrow southerly CR 4 access per plans. Remove (5) five light pole bases, signs and all inside concrete curbing within the county right-of-way. All work shall be performed in accordance with plans provided by Catapano Engineering dated 11/24/03, latest revision 12/8/04	Build (2) - 30' directional street type accesses. Install 165' of 5' wide concrete sidewalk and concrete curbing with handicap ramps. The developer must provide unobstructed pedestrian and wheelchair accessibility from the County right-of-way to the proposed facility. Replace all broken sidewalk at completion of project. Install 'Stop", "One Way", "Do Not Enter" signs as directed. Install themo plastic pavement markings as directed. All work shall be performed in accordance with plans provided by J. A. Hartman, P.E. dated 8/28/04, latest revision 10/4/04.	Construct a right in commercial street type access with full depth asphalt pavement, concrete curbs with 25 ft. curb return radii and pedestrian ramps as per ADA requirements. Construct a right in-right out and left in commercial street type access with full depth asphalt pavement, concrete curbs with 25 ft. curb return radii, monolithic concrete directional island and pedestrian ramps as per ADA requirements. Construct 940 ft. of 5 ft. wide concrete sidewalk, concrete curbing with pedestrian ramps as per ADA requirements, full depth asphalt pavement and required roadway drainage. The developer must provide unobstructed pedestrian and wheelchair accessibility form the County right-of-way to the proposed facility. Install thermoplastic pavement markings as directed.
Project Location	West side of CR 4, Commack Rd, 950' south of NYS Rte. 25, in the Hamlet of Commack, Town of Huntington.	ommack rsection mlet of n of	West side of CR 4, Commack Rd, 250' south of Dorothea St. in the hamlet of Commack, Town of Huntington.	East side of CR 4, Commack Rd. at Crooked Hill Rd in the hamlet of Commack, Town of Smithtown.	East side of CR 4, Commack Rd., 400' south of Imperial Ct. in the hamlet of Commack, town of Smithtown.	West side of CR 4, Commack Rd., at the corner of Long Island Ave, in the hamlet of Commack, town of Babylon.
Permitee (Developer)	Adjo Contracting Corp.	Forest Laboratories Inc.	Joseph Mannino c/o RMS Engineering	Mustafa Kaya Seluk	Peter Georgatos	Unicorp Development
Project Name	BDG (Pep Boys) Access	Forest Labs Site access	Access Permit for Rental car commercial store front	Kaya Service Station Access	Silver Spoon Diner Access	Deer Park Shopping Center Access
Permit Number	4-165	4-203	4-205	4-218	4-220	4-232
County Road	CR004	CR004	CR004	CR004	CR004	CR004

4/24/2008	7/26/2010	7/20/2010	7/20/2010	7/20/2010	8/10/2010	9/29/2010	
11/21/2007	6/4/2008	8/19/2008	8/29/2008	9/23/2008	9/23/2008	3/25/2010	6/2/2012
Construct a 30 ft. wide commercial street type access with full depth asphalt pavement. Remove existing access. Install 400 ft. of 5 ft. wide concrete sidewalk, A 5 ft. dedication is requested along the entire frontage of this parcel on CR 4.	Install/rebuild traffic signal(s) along CR4, Commack Road at Grand Avenue, Burlington Avenue, Long Island Avenue, Marcus Boulevard, Qual Run and Nicolis Road as per approved plans and direction provided by Suffolk County representative. Install +/-1,500 feet of new curb, sidewalk and full depth asphalt between the vicinities of Grand Boulevard and Marcus Avenue.	Construct a right in-right out commercial street type access with full depth asphalt pavement.	The developer must provide unobstructed pedestrian and wheelchair accessibility to the proposed facility. Install thermoplastic pawernent markings as directed. Construct Phase 1-A parking expansion per approved plans.	Construct right turn in only access with deceleration lane per approved plans. Install 100 ft. of 5 ft. wide concrete sidewalk, concrete curbing with pedestrian ramps as per ADA requirements and full depth asphalt payement.	Signal modifications at CR 4 at LIE North and South Service Roads. Install new curb on the east side of CR4, Commack Road between the park and ride entrance and the LIE south service road with ADA provisions and remove existing curbing.	Construct a 40 ft. wide commercial street type access. Remove existing access. Install 155 ft. of 5 ft. wide concrete sidewalk.	Install traffic signal countdown peds and pushbuttons at CR 4 and Long Island Avenue. Replace all broken sidewalk and curb at completion of project. Install new radius cut northwest corner of CR 4 and Long Island Avenue as per approved plans.
West side of CR 4, Commack Rd. on the northwest comer of Gamet St. in the hamlet of Deer Park, Town of Babylon.	On CR 4, Commack Rd. between Grand Ave and Burlington Ave. in the hamlet of Deer Park, Town of Babylon.	West side of CR 4, Commack Rd. Between Grand Blvd. and Marcus Blvd. in the hamlet of Deer Park, Town of Babylon.	At the Deer Park Train Station parking lot in the hamlet of Deer Park, Town of Babylon.	East side of CR 4, Commack Rd. 100 ft. north of Marcus Blvd. in the hamlet of Deer Park, town of Babylon.	CR 4 at the LIE	West side of CR 4, Commack Rd., 707 ft. south of Marcus Blvd. in the hamlet of Deer Park, town of Babylon.	Northwest corner of CR4, Commack Rd and long Island Ave
Custom Commercial Construction	Tanger	Deer Park Enterprises	Tanger (Deer Park enterprises)	Deer Park Enterprises	Tanger (Deer Park enterprises)	Triangle Properties	Texas Roadhouse Holdings, LLC
Commerce (TD) Bank Access	Tanger Access	Deer Park Shopping Center Access (Stop and Shop and Kohl's)	Deer Park Train Station Parking Lot, Improvement by Tanger Project	Home Depot Access	Improvements to CR 4 at LIE	Bridgehampton National Bank Access	Texas Roadhouse Access
4-247	4-264	4-265	4-268	4-269	4-270	4-278	4-293
CR 004	CR004	CR004	CR004	CR004	CR004	CR004	CR004

CR 4, Commack Rd Future Permit Projects

nsideration N/A	Pilgrim State Site Stie Still under c	Heartland
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NO PERMIT

NO PERMIT

	Approval Date	9/1/2004		9/15/2004		10/28/2003		7/7/2003
	Date Issued	1/26/2000	6/21/2000	11/1/2000	2/27/2022	5/2/2002	6/4/2002	12/20/2002
CR 13, Crooked Hill Rd/ Fifth Ave Permit Projects Since 2001	Work Description	Build 35' wide rights in rights out commercial drop curb with reinforced concrete apron & 5' wide sidewalk section. Remove existing access.	Replace 20' of damaged 5' wide concrete sidewalk and all other broken sidewalk at completion of project.	Install 25' +/- LF of 5' wide concrete sidewalk. Install "No Left Tunn" sign (R3-1-30"x30"). Replace all broken sidewalk at completion of project. Restore the County right of-way. *ACCESS ON 3RD AVE. IS TO BE SIGNED TO PRECLUDE ANY EASTBOUND TO NORTHBOUND LEFT TURNS INTO THIS SITE.	Build one 30 wide commercial drop curb with reinforced concrete apron & 5 wide sidewalk section and a right in right out on CR 7, Wicks Rd. Remove 3 existing accesses. Install 300° of 5' wide concrete sidewalk,	Build 36'wide commercial street type access. Install 650' of concrete curbing with handicap ramps, Dedication: 10' +/- along the entire frontage of this parcel on CR 13.	Build 35' wide commercial drop curb with reinforced concrete apron & 5' wide sidewalk section.	Build one right in right out only at northerly end of property. Build 28' wide commercial street type access Build 300' of 5' wide concrete sidewalk Extend center median.
th Ave Pern	Project Location	West side of CR 13, Fifth Ave, n/w/w of Bradley St in Hamlet of Brentwood, Town of Islip	West side of CR 13, Fifth Ave., n/w/c of Anna Rd. in the Hamlet of Bay Shore, Town of Islip.	South side of CR 13, Fifth Avenue, n/e/c of Third Avenue in the Hamlet of Brentwood, Town of Islip.	East side of CR 13, Crooked Hill Rd., at the s/w/c of Wicks Rd., in the hamlet of Brentwood, Town of Islip.	East side of CR 13, Crooked Hill Rd., 260 south of Hamed Stubbed Path in the hamlet of Brentwood, Town of Islip.	East side of CR 13, Fifth Ave, 150' south of Fairtown Rd. in the hamlet of Bay Shore, Town of Islip.	CR 13 at Brook
ed Hill Rd/ Fil	Permitee (Developer)	Paul Lebron	Benny Nieves	Amerada Hess Corp.	G.I. Associates	Commack Hospitality LLC	Duralee Fabrics	Ja-To Building Cont. Inc.
13, Crook	Project Name	Commercial Access for restaurant	Commercial Access store	Hess station Access	7-11 Access Permit.	Wingate Inn Access	Commercial Access	CVS Access Permit
CR	Permit Number	13-351	13-361	13-369	13-398	13-403	13-405	13-407
	County Road	CR013	CR013	CR013	CR013	CR013	CR013	CR013

11/30/2006	5/30/2007	5/30/2007	5/18/2007			
9/16/2004	2/8/2005	6/6/2005	6/21/2005	10/21/2005	6/1/2006	11/21/2006
Build (2) two right in-right/out and left in only commercial street type access, concrete curbs, monolithic concrete directional island and handicap ramps. Remove existing accesses	Build a right in-right out commercial street type Remove existing access.	Install 650 ft. of 5 ft. wide concrete sidewalk, Install approximately 120 ft. of guiderail. Install thermoplastic pavement markings as directed. Install a traffic signal at the intersection of CR 4, Commack Rd. and Garden Gate. Install traffic signal interconnect from the Long Island Expressway North Service Road to the existing signal at the intersection of CR 4, Commack Rd. with CR 67, Vanderbilt Parkway.	Build a right in-right out commercial street type access with 6" asphalt pavement, concrete curbs, monolithic concrete directional island and handicap ramps per attached detail. Install required roadway signage per (NYS MUTCD). Install thermoplastic pavement markings as directed. Replace all broken curb and sidewalk at completion of project.	Remove existing concrete apron and build 28 wide commercial street type access with full-depth asphalt pavement and concrete curbs with 25' radii. Install "Stop" sign @ intersection of access & County Rd. (R1-1C-30"x30"). Install "All Traffic Right Only" sign (R3-14B-24"x30"). Install thermoplastic pavement markings as directed to encourage exiting right turn only movements.	Construct a 24Ft, Commercial access.	Construct 28LF wide commercial street type access with full depth asphalt pavement, concrete curbs with 25ft curb return and radii and pedestrian ramps. Remove existing center access. Install 25 +/- of 5ft wide concrete sidewalk and curb. Restore the County right-of-way.
West side of CR 13, Fifth Ave., 600' south of South Spur Drive in the hardet of Bay Shore, town of Islip.	Southwest corner of CR 13, Fifth Ave., at Candlewood Rd in the hamlet of Brentwood, Town of Islip.	East side of CR 13, Crooked Hill Rd. north of Henry St. in the hamlet of Commack, town of Smithtown.	West side of CR 13, Wicks Rd at the northwest comer of Bradley St. in the hamlet of Brentwood, Town of Islip.	East side of CR 13, Wicks Rd., 100' north of CR 100, Suffolk Ave. in the hamlet of Brentwood, Town of Isip.	East side of CR 13, 120' South of Ackerson St	East side of CR 13, Crooked Hill Road, 218' north of Pilgrim Road. In the Hamlet of Erentwood, Town of Islip.
1440 D & H Realty LLC c/o Rms Engineering	1750 Fith Ave. Plaza LLC c/o Charles Southard Jr.	P. J. Venture LI, LLC	Juan Carolos Defonseca	Alexander B. Erale	Keyspan	Mannix Exterior Wall Systems
Commercial Access for Family Service League	Commercial Access strip mall, subway, dunkin donuts, salon etc.		Fronteras Restaurant Access permit		Keyspan Energy Gas Plant Remediation	
13-437	13-443	13-447	13-452	13-458	13.471	13.478
CR013	CR013	CR013	CR013	CR013	CR013	CR013

1/8/2008	7/29/2009	3/17/2010	1/7/2011		1/19/2012	4/24/2012
Construct 3 - 28 ft. wide commercial street type	Remove existing access. Install 60 ft. of 5 ft. wide concrete sidewalk and concrete curbing.	Construct one 3.5 ft. and one 3.2 ft. wide commercial street type access concrete curbs with 2.5 ft. curb return radii and pedestrian ramps as per ADA requirements. Remove 3 existing accesses. Install 9.5 ft. of 5.ft. wide concrete sidewalk Relocate traffic signal box @ access on Howells Rd.	Construct 28 ft. wide commercial street type access and new 5 ft. sidewalk along frontage.	Construct 35 ft. wide commercial street type access and new 5 ft. sidewalk along frontage.	Construct a 28 ft. wide commercial street type Construct a right in-right out commercial street type access Remove existing access. Install 330 ft. of concrete curbing with pedestrian ramps as per ADA requirements.	Construct a right in-right out and left in commercial street type access. Install 210 ft. right turn lane with 50 ft. taper and 6" asphalt. A 8 ft. dedication is requested along the entire frontage of this parcel on CR 13. Restore the County right-of-way.
Southeast corner of CR 13, Crooked Hill Rd. and CR 106, Campus Rd. in the hamlet of Brentwood, Town of Islip.	West side of CR 13, Wicks Rd. at Bradley St. in the hamlet of Brentwood, town of Islip.	East side of CR 13, Fifth Ave. at Howells Rd. in the hamlet of Bayshore, Town of Islip.	West side of CR 13, Fifth Ave, 200 ft. south of South Spur Drive the hamlet of Bayshore, NY Town of Islip	West side of CR13, Fifth Ave at Drexel Drive, Hamlet of Bayshore, NY Town of Islip	West side of CR 13, Crooked Hill Rd., 439 ft. south of Long Island Expressway in the hamlet of Brentwood, Town of Islip.	West side of CR 13, Fifth Ave. at Spur Drive North in the hamlet of Bayshore, Town of Islip.
Nys Office Of Parks, Recreation c/o LKB	Eng Realty Corp. c/o Oscar Franco	Exxon Mobil Corp. c/oEugene Denicola	Jem Investors	Chase Bank	Crooked Hill Properties c/o Cataldo Grasso Arch.	Custom Commercial Construction Corp.
Commercial Access	Commercial Access for Restaurant	Commercial Access for Exxon Mobile	Commercial Access for Medical Office Bldg	Commercial Access for Bank	Commercial Access for store	Commercial Access For Custom Commercial McDonalds Construction Corp.
13-491	13-510	13-521	13-529	13-532	13-537	13-540
CR013	CR013	CR013	CR013	CR013	CR013	CR013

CR 13 Future Permit Projects

N/A	
New Traffic signal at CR 13 and Henry St, access plans are still under review	West side of CR 13, fifth Ave north of Mechanicville Construct 35 ft. wide commercial access and new sidewalk Rd, hamlet of Bayshore, Town of Islip
CR 13 at Henry	West side of CR 13, fifth Ave north of Mechanicville Rd, hamlet of Bayshore, Town of Islip
	Greymore LLC
Lowes	Commercial access for luxury rental
	13-544
CR013	CR013

CR 13A, Clinton Ave Permit Projects Since 2001

County Road	Permit Number	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued Approval Date	Approval Date
CR013A 13-492	13-492	Commercial access	Keyspan	Northeast corner of CR 13A, Clinton Ave and CR 50, Union Ave	Northeast corner of CR 13A, Construct a commercial access on CR 13A and remove accesses on CR 50, and 5 ft. Union Ave sidewalk along frontage	1/29/2008	9/7/2012



CR 14, Indian Head Rd Permit Projects Since 2001

County Road	Permit Number	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued	Date Issued Approval Date
CR014	14-136	Smithtown Library	Smithtown Library	East side of CR 14, Indian Head Rd, 931 ft. North od NYS 25, hamlet of Commack, Town of Smithtown	Construct a 28 ft. wide commercial street type access	3/19/2010	
CR014	14-122	Christ the King Church	Laser industries, Inc.	West side of CR 14, Indian Head Construct a 35 ft. C Rd at Tara Lane, in the hamlet of type access and ner Commack, Town of Smithtown along the frontage.	West side of CR 14, Indian Head Construct a 35 ft. Commercial street Rd at Tara Lane, in the hamlet of type access and new 5 ft. sidewalk Commack, Town of Smithtown along the frontage.	7/11/2006	11/14/2006
CR014	14-088	Premier Storage Solutions	Racanelli Construction	1,068' north of Old Northport Rd., in the hamlet of Northport, Town of Smithtown.	1,068' north of Old Northport Construct a 30 ft. commercial street Rd., in the hamlet of Northport, type access and new 5ft. Sidewalk Town of Smithtown.	0002/61/9	8/8/2001

CR 17, Wheeler Rd/Carleton Ave Permit Projects Since 2001

County Road	Permit Number	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued	Date Issued Approval Date
CR017	17-388	Central Islip Fire Dept.	Central Islip Fire Dept.	West side of CR 17, Wheeler Rd. 700 ft. south of CR 67, Motor Pkwy. In the hamlet of Central Islip, town of Islip	Construct a 40 ft. wide commercial street type access and install 200 ft. of 5 ft. wide concrete sidewalk and concrete curbing with pedestrian ramps. Modify existing traffic signal; install 45 ft. mast arm. Replace all existing signal faces with new LED type signals. Replace signal controller with new T16N-179 type controller with Kentron software.	8/2/2006	3/14/2008
CR017	17-381	Vanderbilt Plaza LLC		On the west side of CR 17, Wheeler Road, 100' south of CR 67, Motor Parkway in the hamlet of Central Islip, town of Islip.	On the west side of CR 17, handicap ramps. Replace all broken Wheeler Road, 100' south of CR sidewalk at completion or project. A 67, Motor Parkway in the hamlet 15' dedication is requested along the of Central Islip, town of Islip.	1/4/2008	7/1/2008
CR017	17-453	Homerun Hotel	Homerun LLC	Northeast Corner Of Cr17, Carleton Ave At Courthouse Dr, Central Islip, Town Of Islip	Traffic signal improvements at CR 17, Carleton Ave. and Hoppen Drive.		

CR 17, Wheeler Rd/Carleton Ave Future Permit Projects

	N/A.
	Install All New Sidewalk Along Frontage and Upgrade Existing Signal at Courthouse Dr. Comments Provided to the Town Of Islip August 2010
3	Southwest Corner Of Cr 17, Carleton Ave At Dpw Dr, Central Islip, Town Of IslipSetm # 207-01-004.016
2	Ultimate Game Sports Complex
	CR017

Between NY 231 and CR 17, Wheeler Rd/Carleton Ave CR 50, Union Blvd / Johns St Permit Projects Since 2001

NO PERMITS

CR57, Bayshore Rd/Third Ave Permit Projects Since 2001



Date Issued Approval Date	10/7/2003		
Date Issued	12/3/2001		
Work Description	n the south side of CR 66, East Deer Park Ave. at the s/e/c of DeForest Rd. in the hamlet of Dirthy (15) and 6" high concrete island.		
Project Location	On the south side of CR 66, East Deer Park Ave. at the s/e/c of DeForest Rd. in the hamlet of Dix Hills, Town of Huntington.		
Permitee (Developer)	Art League Of Long Island		
Project Name	Art League Of Long Island		
Permit Number	66-31		
County Road	CR066. 66-3		



CR 67, Motor / Vanderbilt Parkway Permit Projects Since 2001

Between NY 231 and CR 17, Wheeler Rd/Carleton Ave

							F
County	Permit	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued	Approval Date
Road	Number						
CR067	67-291	Nutrition Warehouse	Nutrition Warehouse	On the n/s/o CR 67, Motor Parkway, n/w/cor. of Austin Blvd., Hamlet of Hauppauge, Town of Smithtown	Build 12' wide commercial street type exit only	3/29/1999	2/22/2001
CR067	67-436	7-11 and gas station.	Colin Development c/o High Point Eng.	On the south side of CR 67, Motor Pkwy. 300 ft. east of Wick's Rd. in the hamlet of Brentwood, town of Islip.	Construct 2 directional entrance and exit only street type accesses. A dedication is requested along the entire frontage of this parcel on CR 67.	9/17/2008	9/29/2009
CR067	67-332	100 Motor Parkway Associates Office Building	100 Motor Parkway Associates, Tritec	On the north side of CR 67, Motor Pkwy., n/e/c of Moreland Rd. in the hamlet of Hauppauge, Town of Smithtown.	Construct a 62' wide roadway type access providing (3) three exit lanes and (2) two entrance lanes off of Motor Parkway opposite the exit entrance ramp to the L.I.E. at exit 52. Remove center median on Motor Parkway and provide a 350' eastbound to northbound left turn lane at the new proposed site access. Provide all traffic equipment and appurtenances as required. A 9' +/-dedication along 200 Motor Pkwy. from Moreland Rd. 200' easterly for the right turn lane is requested.	7/19/2001	2/21/2002
CR067	67-377	KULLENARY CAFÉ- DELI	King Kullen Grocery c/o James Gesualdi, Esq.	On the south side of CR 67, Motor Pkwy, at Brentwood Pkwy. in the hamlet of Hauppauge, town of Islip.	Remove existing access at east end. The developer must provide unobstructed pedestrian and wheelchair accessibility from the County right-of-way to the proposed facility. Replace all broken sidewalk at completion of project.	4/20/2005	11/17/2005
CR067	67-300	SUFFOLK OTB	Suffolk Regional OTB Corp.	On the south side of Motor Pkwy, CR 67, 301.44' east of Orient Ave. in the Hamlet of Hauppauge, Town of Islip.	Build 2 entrances: 1-28 LF wide and 1-37 LF wide commercial street type access	9/27/1999	10/5/2004

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10000	-	

	1/7/2003	
6002/8/6	12/3/2001	
Construct commercial street type access at NYSDOT signal. Construct a right in-right out commercial street type access. Install 250 ft. of 5 ft. wide concrete sidewalk. Coordinate all work with NYSDOT signal improvements.	Install 275' of concrete curbing with handicap ramps. Install "Stop" sign @ intersection of access and County Rd. (R1-1C-30"x30").	
On the south side of CR 67, Motor Parkway at Kennedy Drive in the hamlet of Brentwood, town of Islip.	On the north side of CR 67, Motor Pkwy., 395 west of Joshua's Path in the hamlet of Hauppauge, Town of Islip.	
Quadrangle Properties c/o Weber Law	MotorLILLC	
QUADRANGLE PROPERTIES (RESTAURANTS AND SHOPS)	Yarde Metals	
67.459	67-339	
CR067	CR067 67	

CR 67 Future Permit Projects Between NY 231 and CR 17, Wheeler Rd/Carleton Ave

4/17/2012	
Remove existing access. Install 200 ft. of 5 ft. wide concrete sidewalk and concrete curbing with pedestrian ramps as per ADA requirements. Install "Stop" sign @ intersection of access and County Road (R1-1-30"x30").	On the north side of CR 67, Motor Parkway 1500 ft. east of CR 7, Wicks Rd. SCTM#800- CR 67, Motor Parkway. Other improvements to be determined.
On the north side of CR 67, Motor Pkwy. at Joshua's Path in the hamlet of Hauppauge, Town of Islip.	Sheraton Long Island Hotel/Marriott Spring Smithtown Long Island Hotel CR 7, Wicks RdSCTM#800-Hill Suites Properties LLC 181-24
Sky Way Land Corp c/o H. Gebhard	Smithtown Long Island Hotel Properties LLC
Bldg. for Yayha Bayat	Sheraton Long Island Hotel/Marriott Spring Hill Suites
67-496	
CR067	CR067

CR 82, Higbie Lane/ Udall's Rd Permit Projects Since 2001

Between CR 7, Wicks Rd and CR17, Wheeler Rd/Carleton Ave CR 100, Suffolk Ave Permit Projects Since 2001

County Road	Permit Number	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued	Date Issued Approval Date
CR100	100-259	Alteration to Existing Retail Strip Mall (Suffolk Plaza)	A. D. Daniels Realty	On the south side of CR 100, Suffolk Ave., 753 ft. east of Wicks Rd. in the hamlet of Brentwood, Town of Islip.	Construct a 28 ft. wide commercial street type access and construct a right out commercial street type access with full depth asphalt pavement and new sidewalk along frontage	1/22/2008	4/27/2010
CR 100	100-217	9 Brothers Bldg. Supply	Mario Palmieri c/o Charles Brudi R.A.	On the south side of CR 100, Suffolk Ave., 269' west of First St. in the hamlet of Brentwood, Town of Islip.	Build 35' wide commercial drop curb with reinforced concrete apron & 5' wide sidewalk section.	3/4/2004	10/13/2010
CR 100	100-269	Brentwood Professional Bldg., C/O Jeffrey Butler	On the south side of CR 100. Brentwood Professional Bldg., Suffolk Ave., 750 ft. east of c/o Jefffey Butler of Brentwood Pkwy. in the ham of Brentwood, Town of Islip	let	Construct a 28 ft. wide commercial street type access with full depth asphalt pavement, concrete curbs with 25 ft. curb return radii and pedestrian ramps as per ADA requirements. Remove existing access.	11/14/2008	4/15/2010
CR 100	100-296	Universal Church	Universal Church c/o Barrett, Bonacci & Van Weele	On the north side of CR 100, Suffolk Ave, 600 ft. west of Fulton St. in the hamlet of Brentwood, Town of Islip.	Construct 28 ft. wide commercial street type access. Remove existing access. Install 215 ft. of 5 ft. wide concrete sidewalk	11/23/2010	6/8/2012
CR100	100-241	A-1 Quality Limousine, LLC	A-1 Quality Limousine, LLC c/o Notaro Grupp	On the south side of CR 100, Suffolk Ave., 20 ft. east of Bergen St. in the hamlet of Brentwood, Town of Islip.	Remove existing westerly access, replace existing access.	10/13/2006	8/8/2008
CR100	100-240	Hess Station	Amerada Hess Corporation c/o Suffolk Ave. at Joshua's Path Eugene Denicola, Esq. (S.R. 111) in the hamlet of Central Islip, Town of Islip.		Construct a 35 ft. wide commercial drop curb with reinforced concrete apron & 5 ft. wide sidewalk section. Remove 2 existing accesses.	8/31/2006	10/30/2007
CR 100	100-302	Medical Building	127 West Suffolk, Inc. c/o John Amisano	On the north side of CR 100, Suffolk Ave., 469 ft. east of Rte. 111 in the hamlet of Central Islip, Town of Islip.	On the north side of CR 100, Suffolk Ave., 469 ft. east of Rte. Replace a 35 ft. wide commercial 111 in the hamlet of Central Islip, drop curb with reinforced concrete Town of Islip.	6/27/2011	

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CR100	100-262	Commercial Building	Carl-Henri Sanchez c/o Steve Andujar	On the south side of CR 100, Suffolk Ave., 1,300 ft. east of Ste. Rte. 111 in the hamlet of Central Islip, Town of Islip.	Construct a 35' wide commercial drop curb with reinforced concrete apron & 5 ft. wide sidewalk section.	7/8/2008	12/11/2008
CR100	100-267	Driving School	Victor Perez c/o Kurt Jacobs	On the north side of CR 100, Suffolk Ave. at Bergen St. in the hamlet of Brentwood, Town of Islip.	Remove existing access. Install concrete curbing with pedestrian ramps as per ADA requirements. Replace all broken curb and sidewalk at completion of project.	10/9/2008	6/23/2010
CR100	100-307	Taco Bell	Lorich Construction Mgmt. LLC	On the south side of CR 100, Suffolk Ave., 700 ft. west of Carleton Ave. in the hamlet of Central Islip, Town of Islip.	Construct a 28 ft. wide commercial street type access. Construct a 18 ft. wide right out commercial street type access.	1/20/2012	4/26/2012
CR100	100-276	MTA Police Facility C.I.	MTALIRR	On the south side of CR 100, Suffolk Ave. at CR 17, Carleton Ave. in the hamlet of Central Islip, Town of Islip.	Construct a 20 ft. wide drop curb with reinforced concrete apron & 5 ft. wide sidewalk section at the west end of property.	4/30/2009	5/24/2011

CR 100, Suffolk Ave Permit Projects Since 2001 Between CR 7, Wicks Rd and CR17, Wheeler Rd/Carleton Ave

5/2/2012
On the south side of CR 100, Suffolk Ave., 2,857 ft. west of Islip Ave. in the hamlet of Brentwood, town of Islip.
On the south side of CR 100, Suffolk Ave., 2,857 ft. west of Islip Ave. in the hamlet of Brentwood, town of Islip.
Lange Office Bldg., Inc. c/o Emmanuel Tehn-Addy
Lange Office Bldg., Inc.
100-311
CR100

NO PERMITS

Between NYS 231 and CR17, Wheeler Rd/Carleton Ave I-495 North Service Rd Permit Projects Since 2001

No Permits

Between NYS 231 and CR17, Wheeler Rd/Carleton Ave I-495 North Service Rd Permit Projects Since 2001

No Permits

Wheeler Rd/Carleton Ave I-495 South Service Rd Permit Projects Since 2001 Between NYS 231 and CR17,

County Road	Permit Number	Project Name	Permitee (Developer)	Project Location	Work Description	Date Issued	Date Issued Approval Date
L495 S	1495-144	Medical Action Industries	Medical Action Industries	On the south side of the Long Island South Service Rd., 150 ft. east of CR 7, Wicks Rd. in the hamlet of Brentwood, Town of Islip.	Install concrete curbing with pedestrian ramps and detectable warning tiles as per ADA requirements. Replace all damaged curbing and sidewalk as directed.	3/4/2008	2/13/2009
I-495 S	1495-142	Highland Plaza	Expressway Associates, LLC	On the east side of the L.I.E. South Service Rd. at Highland Rd. in the hamlet of Brentwood, Town of Islip	Construct a right in commercial street type access with full depth asphalt pavement, concrete curbs with 25 ft. curb return radii, pedestrian ramps as per ADA requirements. Install 290 ft. of 5 ft. wide concrete sidewalk and concrete curbing with pedestrian ramps with detectable warming tiles as per ADA requirements. Dedication at the comer of Highland Ave. and IS95S to the proper agency required.	12/17/2007	
I495 S	1495-107	Holiday Inn Express	Joseph Zanghi	On the south side of LIE Service type access with 6" asphalt Rd., 985' west of Wheeler Rd. in pavement, concrete curbs & the hamlet of Hauppauge, Town handicap ramps. Install 100' of of Islip.	Build 28 LF wide commercial street type access with 6" asphalt pavement, concrete curbs & handicap ramps. Install 100' of concrete curbing.	10/26/1999	3/7/2001



COUNTY ROAD 4	LOCATION	AADT	Year
		16,800	2011
CR 4, Commack Road	200 FT S/O CARLLS STRAIGHT PATH	<u>'</u>	
		14,000	2002
CR 4, Commack Road	200 FT S/0 CR57	14,200	2011
		14,900	2001
CR 4, Commack Road	200 FT N/O BOWLING LA	26,700	2011
		21,800	2002
CR 4, Commack Road	300 FT S/O LONG ISLAND AV	27,400	2011
		24,400	2002
CR 4, Commack Road	500 FT N/O BURLINGTON AV	26,200	2011
		23,000	2001
CR 4, Commack Road	1000 FT N/O EUCLID AV	23,600	2011
		23,900	2002
CR 4, Commack Road	500 FT N/O KILMER AV	25,400	2011
		26,000	2002
CR 4, Commack Road	AT LIE OVERPASS	27,500	2011
		32,000	2001
CR 4, Commack Road	200 FT S/O GAROADEN GATE	24,200	2011
		26,200	2001
CR 4, Commack Road	100 FT S/0 CR67	30,600	2011
		34,100	2001
CR 4, Commack Road	100 FT S/O NO STATE PKWY	36,500	2011
		40,700	2001
CR 4, Commack Road	200 FT S/O DALY ROAD	35,100	2011
		40,900	2002
CR 4, Commack Road	500 FT N/O GENESSEE DR	27,700	2009
		29,400	2002
CR 4, Commack Road	400 FT N/O DOVECOTE LA	17,400	2011
		20,700	2001



COUNTY ROAD 7	LOCATION	AADT	Year
CR 7, Wicks Road	200 FT S/O CR106	15,500	2011
		16,200	2001
CR 7, Wicks Road	400 FT S/O 1495S	15,800	2011
		23,100	2004
CR 7, Wicks Road	AT LIE OVERPASS	18,300	2011
		32,200	2004



COUNTY ROAD 13	LOCATION	AADT	Year
CR 13, Bay Shore Road - Crooked Hill Road	200 FT N/O SR 27A	5,100	2011
		6,300	2004
CR 13, Bay Shore Road - Crooked Hill Road	100 FT N/O LIRR XING	8,400	2011
		10,100	2004
CR 13, Bay Shore Road - Crooked Hill Road	200 FT S/O CR 57	23,400	2011
		23,000	2004
CR 13, Bay Shore Road - Crooked Hill Road	200 FT S/O SR 27 SO SERVICE ROAD	26,300	2011
		28,200	2004
CR 13, Bay Shore Road - Crooked Hill Road	200 FT S/O BROOK AV	27,300	2011
		27,600	2002
CR 13, Bay Shore Road - Crooked Hill Road	100 FT N/O BROOK AV	29,200	2011
		29,300	2002
CR 13, Bay Shore Road - Crooked Hill Road	100 FT S/O DRAYTON AV	26,000	2011
		33,700	2002
CR 13, Bay Shore Road - Crooked Hill Road	200 FT N/O CANDLEWOOD ROAD	26,100	2011
		32,300	2005
CR 13, Bay Shore Road - Crooked Hill Road	150 FT N/O PINEAIRE DR	32,800	2011
		41,500	2002
CR 13, Bay Shore Road - Crooked Hill Road	100 FT N/O YARNELL ST	29,600	2011
		32,700	2002
CR 13, Bay Shore Road - Crooked Hill Road	100 FT N/O ST PETERS ROAD	17,900	2011
		17,400	2001
CR 13, Bay Shore Road - Crooked Hill Road	100 FT S/O SAGTIKOS PKWY	21,900	2011
		17,800	2001
CR 13, Bay Shore Road - Crooked Hill Road	500 FT S/O I495S	18,100	2011
		15,200	2001
CR 13, Bay Shore Road - Crooked Hill Road	BETWEEN LIE SERVICE ROADS	15,400	2011
		11,800	2001
CR 13, Bay Shore Road - Crooked Hill Road	400 FT N/O I495N	14,500	2011
		9,600	2003



COUNTY ROAD 14	LOCATION	AADT	Year
CR 14, Indian Head Road	600 FT N/O ROXBURY DR	16,800	2011
		16,500	2001
CR 14, Indian Head Road	500 FT N/O OLD NORTHPORT ROAD	12,100	2011
		12,000	2001

COUNTY ROAD 17	LOCATION	AADT	Year
CR 17 Carleton Ave, Wheeler Road	400 FT N/O SR 27A	12,000	2011
		14,800	2000
CR 17 Carleton Ave, Wheeler Road	100 FT N/O JEFFERSON ST	18,400	2011
		19,100	2000
CR 17 Carleton Ave, Wheeler Road	100 FT N/O ROSLYN ST	22,100	2011
		24,300	2003
CR 17 Carleton Ave, Wheeler Road	BETWEEN SPUR DRIVES	21,700	2011
		18,800	2000
CR 17 Carleton Ave, Wheeler Road	500 FT N/O SPUR DRIVE NORTH	21,700	2011
		18,800	2000
CR 17 Carleton Ave, Wheeler Road	200 FT N/O COURTHOUSE DR	22,600	2011
		22,500	2003
CR 17 Carleton Ave, Wheeler Road	100 FT N/O SMITH ST	20,200	2011
		21,500	2000
CR 17 Carleton Ave, Wheeler Road	100 FT N/O OAKDALE AV	18,300	2011
		20,300	2000
CR 17 Carleton Ave, Wheeler Road	300 FT S/O SR 111	11,500	2011
		15,300	2000



COUNTY ROAD 50	LOCATION	AADT	Year
CR 50, Union Blvd	400 FT W/O CR 82	14,300	2011
		14,000	2001
CR 50, Union Blvd	1300 FT W/O KEITH LA	14,200	2011
		14,300	2001
CR 50, Union Blvd	BETWEEN CR 13A & CR 13	13,000	2011
		14,400	2004
CR 50, Union Blvd	300 FT E/O CR 13	13,300	2011
		12,200	2001
CR 50, Union Blvd	500 FT W/O SAXON AV	11,300	2011
		12,400	2003
CR 50, Union Blvd	500 FT W/O CR 17	9,000	2011
		8,600	2001

COUNTY ROAD 57	LOCATION	AADT	Year
CR 57, Bay Shore Road	100 FT S/O CARLLS PATH	16,700	2010
		17,000	2001
CR 57, Bay Shore Road	200 FT S/O WEEKS ROAD	20,700	2010
		24,600	2004
CR 57, Bay Shore Road	300 FT N/O STOREY BLVD	22,400	2010
		26,400	2004
CR 57, Bay Shore Road	200 FT N/O MANOR LA	22,900	2010
		22,300	2001
CR 57, Bay Shore Road	BETWEEN SR 27 SERIVCE ROADS	18,400	2010
		19,500	2001
CR 57, Bay Shore Road	200 FT N/O CR 13	9,700	2010
		9,800	2001
CR 57, Bay Shore Road	200 FT S/O CR 13	13,900	2010
		13,800	2001



COUNTY ROAD 66	LOCATION	AADT	Year
CR 66, Deer Park Road East	300 FT N/O PRINCETON DR	23,500	2011
		23,600	2000

COUNTY ROAD 67	LOCATION	AADT	Year
CR 67, LI Motor Parkway	100 FT E/O HEARTHSTONE DR	6,000	2011
		6,800	2001
CR 67, LI Motor Parkway	700 FT E/O CR 4	14,600	2011
		17,000	2001
CR 67, LI Motor Parkway	400 FT W/O SHINBONE LA	12,800	2011
		14,300	2001
	200 FT W/O HAUPPAUGE CORPORATE		
CR 67, LI Motor Parkway	CENTER	15,100	2011
		18,000	2001
CR 67, LI Motor Parkway	200 FT W/O CALEBS PATH	18,000	2011
		20,300	2001
CR 67, LI Motor Parkway	300 FT W/O SR 111	20,300 12,000	2001 2011
CR 67, LI Motor Parkway	300 FT W/O SR 111	<u> </u>	
CR 67, LI Motor Parkway CR 67, LI Motor Parkway	300 FT W/O SR 111 500 FT W/O CR 17	12,000	2011

COUNTY ROAD	LOCATION	AADT	Year
CR 82, Higbie Lane/Udall Road	100 FT S/O CR 50	11,000	2011
		14,300	2004
CR 82, Higbie Lane/Udall Road	1000 FT N/O CR 50	21,500	2012
		20,700	2004



COUNTY ROAD 100	LOCATION	AADT	Year
CR 100, Suffolk Ave	400 FT E/O BRENTWOOD ROAD	20,200	2011
		20,600	2001
CR 100, Suffolk Ave	500 FT W/O CR 17	21,700	2011
		23,400	2001

COUNTY ROAD 106	LOCATION	AADT	Year
CR 106, Community College Drive	600 FT E/O CR 13	8,100	2011
		9,200	2001

STATE ROAD	LOCATION	AADT	Year
Sagtikos Parkway	INT S3 - Pine Aire Drive	86,430	2011
		81,290	2007
Sagtikos Parkway	INT 53 N S Rt 495	84,760	2011
		70,950	2000
Sagtikos Parkway	INT NSP INT 44	67,210	2011
		62,980	2000
Sagtikos Parkway	INT Rte 454 Vets Mem Hwy	63,040	2011
		47,100	2000
Sagtikos Parkway	INT Rte 25 Jericho Tpke	55,710	2011
		40,670	2000
Sagtikos Parkway	INT Pulaski Road	29,820	2011
		24,030	2001
Sagtikos Parkway	INT Rte 25A	11,720	2011
		8,820	2000



STATE ROAD	LOCATION	AADT	Year
Sunrise Highway, NY 27	INT 40 RT 231	90,980	2011
		80,660	2001
Sunrise Highway, NY 27	INT 41 RT 908J ROBERT MOSES CAUSEWAY	82,220	2011
		86,110	2001
Sunrise Highway, NY 27	INT 43 CR 13 5TH AVE	98,820	2011
		92,400	2000
Sunrise Highway, NY 27	INT 44 BRENTWOOD ROAD	100,380	2011
		99,380	2002
Sunrise Highway, NY 27	RT 111 ISLIP TERRACE	98,850	2011
		90,030	2000

STATE ROAD	LOCATION	AADT	Year
LIE, I-495	INT 51 RT 231	179,420	2011
		161,300	2002
LIE, I-495	INT 52 CR 4 COMMACK ROAD	175,610	2011
		157,870	2002
LIE, I-495	INT 53 SAGTIKOS STATE PKWY	137,010	2011
		123,170	2002
LIE, I-495	INT 54 WICKS ROAD	113,220	2011
		101,790	2002
LIE, I-495	INT 55 MOTOR PKWY W CROSSOVER	180,240	2011
		171,670	2007



STATE ROAD	LOCATION	AADT	Year
Southern State Parkway	INT 39 RT 231	122,600	2011
		130,550	2002
Southern State Parkway	INT 40 ROB MOSES CWY	112,080	2011
		102,860	2006
Southern State Parkway	INT 41A SAGIKOS ST PKY	139,700	2011
		134,040	2007
Southern State Parkway	INT 42 CR 13 & CR 13A	76,600	2011
		66,380	2000
Southern State Parkway	INT 43 RT 111 ISLIP AV	61,350	2011
		50,640	2000

STATE ROAD	LOCATION	AADT	Year
Veterans Hwy, NY 454	SUNKEN MEADOW PKWY	20,710	2011
		27,890	2003
Veterans Hwy, NY 454	START RT 347 OLAP	23,420	2011
		24,960	2004
Veterans Hwy, NY 454	OLD WILLETS PATH	77,170	2011
		66,480	2000
Veterans Hwy, NY 454	END 347 OLAP	60,580	2011
		66,480	2000
Veterans Hwy, NY 454	RT 111	22,070	2011
		24,660	2002



STATE ROAD	LOCATION	AADT	Year
Northern State Parkway	INT 42 DEER PARK ROAD RT 231	76,940	2011
		75,240	2002
Northern State Parkway	INT 43 COMMACK ROAD	75,690	2011
		71,900	2006
Northern State Parkway	INT 44 SMSP AND SGSP	65,450	2011
		62,170	2006
Northern State Parkway	NEW HIGHWAY	50,830	2011
		45,190	2000
Northern State Parkway	JCT VETS MEMORIAL HWY	47,750	2011
		39,380	2000

STATE ROAD	LOCATION	AADT	Year
Joshua's Path, NY 111	ACC RT 27	16,760	2011
		15,800	2001
Joshua's Path, NY 111	ACC SOUTHERN STATE PKY	17,490	2011
		18,030	2001
Joshua's Path, NY 111	CR 100 SUFFOLK AVE	20,210	2011
		20,790	2001
Joshua's Path, NY 111	MOTOR PKWY CR 67	15,780	2011
		14,570	2001
Joshua's Path, NY 111	ACC RT 495 L.I.E.	12,190	2011
		11,550	1998
Joshua's Path, NY 111	RT 454 VETERANS MEMORIAL HWY	21,380	2011
		18,680	2001
	TWN ISLIP TWN SMITHTOWN JCT		
Joshua's Path, NY 111	TWN LINE ROAD	19,210	2011
		21,520	2001
Joshua's Path, NY 111	RT 347	25,800	2011
		22,950	2002



Appendix 6. Turning Movement Count Locations

COUNTY ROAD	LOCATION	DATE
CR 4, Commack Road	CENTRAL AV	10/16/2006
CR 4, Commack Road	CHERUBINA LA	10/16/2006
CR 4, Commack Road	CR 4 at CR 57	5/13/2010
CR 4, Commack Road	BOWLING LA	9/25/2009
CR 4, Commack Road	CROSSWAY ROAD	9/25/2009
CR 4, Commack Road	QUAIL RUN DR	8/5/2009
CR 4, Commack Road	GRAND BLVD	12/19/2002
CR 4, Commack Road	EUCLID AV	7/14/2010
CR 4, Commack Road	CR 4 at I495S	12/17/2002
CR 4, Commack Road	CR 4 at I495N	12/17/2002
CR 4, Commack Road	IMPERIAL GATE	3/8/2012
CR 4, Commack Road	HENRY ST	3/8/2012
CR 4, Commack Road	CR 4 at CR 13	3/7/2012
CR 4, Commack Road	CR 4 at CR 67	3/8/2012
CR 4, Commack Road	NO STATE PKWY LOOP WB TO NB CR4	3/8/2012
CR 4, Commack Road	DALY ROAD	3/8/2012
CR 4, Commack Road	FOREST LABS DWY (N)	3/7/2012
CR 4, Commack Road	NEW HWY	3/14/2012
CR 4, Commack Road	RENSSELAER DR	3/8/2012
CR 4, Commack Road	WICKS ROAD	3/14/2012
CR 4, Commack Road	DOROTHEA ST	3/14/2012
CR 4, Commack Road	FAIRFIELD WAY	3/14/2012
CR 4, Commack Road	PEPPERTREE COMMONS	3/14/2012



COUNTY ROAD	LOCATION	Year
CR 7, Wicks Road	CR 7 @ CR 13	11/30/2011
CR 7, Wicks Road	LEAHY AV	12/1/2011
CR 7, Wicks Road	HANCOCK ST	12/1/2011
CR 7, Wicks Road	CHAPEL HILL DR	12/1/2011
CR 7, Wicks Road	HEYWAROAD ST	12/1/2011
CR 7, Wicks Road	CR 7 @ CR 106	12/1/2011
CR 7, Wicks Road	SUFFOLK COMMUNITY COLLEGE ENTRANCE/ EXIT	12/1/2011
CR 7, Wicks Road	CR 7 at I495S	12/1/2011
CR 7, Wicks Road	CR 7 at CR 67	12/13/2011

COUNTY ROAD	LOCATION	Year
CR 13, Bay Shore Road - Crooked Hill Road	CR 13 at CR 7	11/30/2011
CR 13, Bay Shore Road - Crooked Hill Road	McNAIR ST	11/30/2011
CR 13, Bay Shore Road - Crooked Hill Road	LEAHY AV	10/25/2012
CR 13, Bay Shore Road - Crooked Hill Road	CR 106 at CR 13	12/1/2011
CR 13, Bay Shore Road - Crooked Hill Road	SUFFOLK COMMUNITY COLLEGE ENTRANCE/ EXIT	11/30/2011
CR 13, Bay Shore Road - Crooked Hill Road	CR 13 at I495S	3/7/2012
CR 13, Bay Shore Road - Crooked Hill Road	CR 13 at I495N	3/7/2012
CR 13, Bay Shore Road - Crooked Hill Road	HENRY ST	3/7/2012
CR 13, Bay Shore Road - Crooked Hill Road	CROOKED HILL COMMONS (N) DWY - SIGNAL	3/7/2012
CR 13, Bay Shore Road - Crooked Hill Road	CR 13 at CR 4	3/7/2012



COUNTY ROAD	LOCATION	Year
CR 14, Indian Head Road	CR 14 at CR 67	3/8/2012
CR 14, Indian Head Road	SUNKEN MEADOW PKWY ENT/EXIT- LIBRARY	3/18/2004
CR 14, Indian Head Road	COWIE ROAD S	3/18/2004
CR 14, Indian Head Road	TARA LA	10/23/2012
CR 14, Indian Head Road	SOMERS LA	3/18/2004
CR 14, Indian Head Road	DWY #341, #348, #351, #358	3/29/2007
CR 14, Indian Head Road	REYDON WAY	3/18/2004
CR 14, Indian Head Road	ROXBURY DR	3/18/2004
CR 14, Indian Head Road	OLD NORTHPORT ROAD	3/18/2004
CR 14, Indian Head Road	ELLEN PL	3/18/2004
CR 14, Indian Head Road	MEADOW ROAD W	3/18/2004



COUNTY ROAD	LOCATION	Year
CR 17 Carleton Ave, Wheeler Road	CR 17 at CR 50	1/22/2009
CR 17 Carleton Ave, Wheeler Road	CLEVELAND ST	5/4/2010
CR 17 Carleton Ave, Wheeler Road	NASSAU ST	5/4/2010
CR 17 Carleton Ave, Wheeler Road	BEAVER DAM ROAD	5/4/2010
CR 17 Carleton Ave, Wheeler Road	MANHATTAN BLVD	5/4/2010
CR 17 Carleton Ave, Wheeler Road	SPUR DRIVE SOUTH	5/4/2010
CR 17 Carleton Ave, Wheeler Road	SPUR DRIVE NORTH	5/4/2010
CR 17 Carleton Ave, Wheeler Road	BELT DR W	6/2/2010
CR 17 Carleton Ave, Wheeler Road	HOPPEN AV	5/4/2010
CR 17 Carleton Ave, Wheeler Road	S RESEARCH PL	5/4/2010
CR 17 Carleton Ave, Wheeler Road	GULL HAVEN ROAD	5/4/2010
CR 17 Carleton Ave, Wheeler Road	SUNBURST ROAD	5/4/2010
CR 17 Carleton Ave, Wheeler Road	SMITH ST	5/4/2010
CR 17 Carleton Ave, Wheeler Road	EARLE ST	5/4/2010
CR 17 Carleton Ave, Wheeler Road	CLAYTON ST	5/4/2010
CR 17 Carleton Ave, Wheeler Road	2ND AV	5/4/2010
CR 17 Carleton Ave, Wheeler Road	CR 100 at CR 17	10/5/2006
CR 17 Carleton Ave, Wheeler Road	DIETZ ST	6/8/2010
CR 17 Carleton Ave, Wheeler Road	CENTRAL ISLIP HIGH SCHOOL	6/8/2010
CR 17 Carleton Ave, Wheeler Road	ADAMS ROAD	6/8/2010
CR 17 Carleton Ave, Wheeler Road	CR 17 at CR 67	12/14/2011



COUNTY ROAD	LOCATION	Year
CR 50, Union Blvd	CR 50 at CR 82	10/16/2006
CR 50, Union Blvd	N WINDSOR AV	1/12/2010
CR 50, Union Blvd	MONTGOMERY AV	12/17/2009
CR 50, Union Blvd	PENATAQUIT AV	5/15/2003
CR 50, Union Blvd	BRENTWOOD ROAD	5/6/2003
CR 50, Union Blvd	SAXON AV	7/13/2011
CR 50, Union Blvd	IRISH LA	3/20/2007
CR 50, Union Blvd	CR 17 at CR 50	1/22/2009

COUNTY ROAD	LOCATION	Year
CR 57, Bay Shore Road	CARLLS STRAIGHT PATH	5/13/2010
CR 57, Bay Shore Road	CR 4 at CR 57	5/13/2010
CR 57, Bay Shore Road	BROOK AV	5/13/2010
CR 57, Bay Shore Road	WEEKS ROAD	5/13/2010
CR 57, Bay Shore Road	BROOKDALE AV	5/13/2010
CR 57, Bay Shore Road	UDALL ROAD	5/13/2010
CR 57, Bay Shore Road	HOWELLS ROAD	5/13/2010
CR 57, Bay Shore Road	SO STATE PKWY RAMP WB TO NW CR57	5/13/2010
CR 57, Bay Shore Road	MANOR LA	5/13/2010
CR 57, Bay Shore Road	MUNCEY ROAD	5/13/2010
CR 57, Bay Shore Road	ACKERSON BLVD	5/13/2010
CR 57, Bay Shore Road	3ROAD AV	11/28/2007

COUNTY ROAD	LOCATION	Year
CR 66, Deer Park Road East	CR 35 at CR 66	10/17/2000
CR 66, Deer Park Road East	N DEFOREST ROAD	3/29/2001



COUNTY ROAD	LOCATION	Year
CR 67, LI Motor Parkway	CR 3 at CR 67	2/28/2008
CR 67, LI Motor Parkway	HALF HOLLOW ROAD	2/28/2008
CR 67, LI Motor Parkway	WINTHROP DR	2/28/2008
CR 67, LI Motor Parkway	NY231	2/28/2008
CR 67, LI Motor Parkway	CARLLS STRAIGHT PATH	2/28/2008
CR 67, LI Motor Parkway	NO STATE PKWY ACCESS ROAD	3/8/2012
CR 67, LI Motor Parkway	CR 4 at CR 67	3/8/2012
CR 67, LI Motor Parkway	CR 14 at CR 67	3/8/2012
CR 67, LI Motor Parkway	SHINBONE LA	12/13/2011
CR 67, LI Motor Parkway	AUSTIN BLVD	12/13/2011
CR 67, LI Motor Parkway	CR 67 at CR 7	12/13/2011
CR 67, LI Motor Parkway	1495 CDN WB ENT/EXIT RAMPS AT EXIT 53/54	12/13/2011
CR 67, LI Motor Parkway	HAUPPAUGE CORPORATE CENTER	12/13/2011
CR 67, LI Motor Parkway	LINCOLN AV	12/13/2011
CR 67, LI Motor Parkway	ADAMS AV	12/13/2011
CR 67, LI Motor Parkway	WASHINGTON AV	12/13/2011
CR 67, LI Motor Parkway	MARCUS BLVD	12/13/2011
CR 67, LI Motor Parkway	CR 108 at CR 67	8/10/2006
CR 67, LI Motor Parkway	CR 17 at CR 67	12/14/2011

COUNTY ROAD	LOCATION	Year
CR 82, Higbie Lane/Udall Road	CR 50 at CR 82	10/16/2006
CR 82, Higbie Lane/Udall Road	RODERICK ROAD	3/10/2010

COUNTY ROAD	LOCATION	Year
CR 100, Suffolk Ave	PARK AV	12/1/2009
CR 100, Suffolk Ave	WASHINGTON AV	12/15/2005
CR 100, Suffolk Ave	NY111	10/6/2005
CR 100, Suffolk Ave	PETERS BLVD N	10/5/2006
CR 100, Suffolk Ave	CR 100 at CR 17	10/5/2006

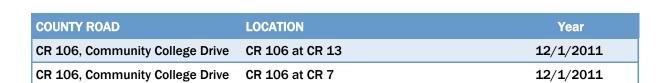


Table 35 - Congestion Mitigations

						Scenario			
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Term
Commack Road (CR 4)	Additional access roadways linking the northern portion of Heartland Industrial Park to Heartland Town Square and linking to both Commack Road, CR 4 and Campus Road/G Road	CR 4-1	ВНР				Х		Х
	• Develop two by-pass truck routes, one runs along the west side of the development between the Heartland Industrial Park and the Pilgrim State access at Commack Road and the second by-pass route on the east side of the site will connect the Hearltand Industrial Park with G Road/Campus Road	CR 4-2A, 2B	HTS		х				Х
	• Increase width on Commack Road under LIE by reconstructing LIE (I-495) overpass	CR 4 -3	HTS		Х				Х
	• At the LIE service roads on northbound, southbound and eastbound approaches add a right turn lane, also add one additional through lane on the eastbound and westbound approaches	CR 4-4	HTS		Х				Х
	Reconstruction and resurfacing improvements from Julia Circle to LIE	CR 4-5	'06 -TIP	Х					
	Removing unused bridge structure, approx. 1500 feet south of Julia Circle	CR 4-6	'06 -TIP	Х					
	• Construction of new pedestrian bridge, approx. 1500 feet south of Julia Circle within limits of Edgewood Preserve	CR 4-7	DPW		Х			Х	
	Reconstruct Commack Road to a five-lane section from the LIE to Fish Path/Pilgram State access	CR 4-8	DPW		Х				Х
	Reconstruction of traffic signals at Long Island Avenue, Marcus Boulevard, Quail Run Drive, Nicolls Road	CR 4-9A, 9B, 9C	ТО	Х					
	At the LIE South Service Road an exclusive eastbound and northbound right turn lanes are constructed	CR 4-10	ТО	Х					
	• Reconstruction of the intersection at CR 57, Bayshore Road	CR 4-11	DPW	X					
	Construct exclusive southbound right turn lane at Long Island Avenue	CR 4-12	DPSC	X					
	Construct a northbound right turn lane at South Service Road to LIE at park and ride lot	CR 4 -13	HTS	X					
	Prevent Heartland Property traffic from using existing CR 4, Commack Road entrance to Pilgrim State Psychiatric Center by the installation of a card-activated access controlled gate	CR 4-14	HTS				Х	х	
	Add signalized access at Commack Road and Pilgrim State access/Fish Path	CR 4 -15	HTS		Х				Х
	Intersection improvements at Long Island Avenue	CR 4-16	HTS		X				X
	Intersection improvements at Long Island Avenue Intersection improvements at Grand Boulevard	CR 4-10	HTS		^		X	X	
Wiele Bood (CD 7)	• Reconstruction of CR 7, Wicks Road, Phase I from Blue Jay Drive to 700' N/O CR 67 Motor Parkway, reconstructed CR 7, added second	CN 4-17	1113				^	^	-
Vicks Road (CR 7)	southbound lane between LIE and Blue Jay Drive. Added a northbound right turn lane from CR 7 to eastbound LIE South Service Road widened the LIE South Service Road west of CR 7 to add a right turn lane and thru lane. Reconstructed CR 67 to add a westbound to southbound left turn lane at CR 7. Rebuilt the signal at CR 7 and LIE South Service Road and CR 7 at CR 67	CR 7-17A, 17B	'06 -TIP	x					
	• Improvements to CR 7, Wicks Road, Phase II from the vicinity of Blue Jay Drive to the vicinity of CR 13, Fifth Avenue, widen road at north entrance to college, signal rebuilds at CR 7 at Hancock Street, CR 7 at Heyward Avenue, CR 7 at CR 106, CR 7 at College Access Road and new signals at CR 7 at Leahy Drive and CR 7 at Chapel Hill Drive. New parking lane on eastside of CR 7 between CR 106 and Blue Jay Drive. Additional southbound lane on CR 7 between Blue Jay Drive to Heyward Avenue, new southbound to westbound right turn lane at CR 7 and College Access Road	CR 7-18A, 18B	DPW	Х					
Crooked Hill Road (CR 13)	Construct a ramp connecting Crooked Hill Road to the LIE South Service Road	CR 13-19	SDP			X			X
	Re-stripe Crooked Hill Road under the LIE to provide either a second southbond lane or two northbound left turn lanes	CR 13-20	HTS/DPW		Х			Х	
	At LIE North Service Road add one southbound lane; reconstruct westbound approach (three lanes)	CR 13-21	HTS		Х				Х
	Add additional southbound right turn lane at the LIE North Service Road	CR-13-21A	HTS/DPW		Х				Х
	Widening to four thru lanes plus turn lanes between the LIE and the existing Pilgrim State entrance	CR 13-22	HTS/ DPW		Х			Х	
	• Existing Pilgrim State intersection will be reconstructed and a traffic signal installed. Eastbound approach will be expanded	CR 13-23	HTS		Х			Х	
	South of Pilgrim State access, add third southbound lane on Crooked Hill Road in both directions from existing Pilgrim State access to Campus Road	CR 13-24	HTS		х				Х
	Over the Sagtikos Parkway, reconstruct Crooked Hill Road bridge to accommodate additional lanes on Sagtikos Parkway	CR 13-25	HTS			Х			Х
	• At Community College Drive, CR106, add second left turn lane northbound; add second left turn lane westbound; add second eastbound left turn lane; reconstruct intersection	CR 13-26	HTS		х			х	
	• Reconstruct LIE eastbound and westbound ramps to southbound Sagtikos Parkway to allow trucks and cars off on Crooked Hill Road at access to Heartland Town Square. Construct new exit ramps to Crooked Hill Road from westbound & eastbound LIE to Sagtikos Parkway. Align new ramp with new signalized intersection at new access point	CR 13-27	HTS			Х			х
	• Construction of an area for Motor Carrier Unit of the Suffolk County Police Department to conduct inspection of area trucks approximately 300 feet south of the signalized driveway to Robert Street	CR 13-28	DPW	х					
	• Intersection improvements to CR 13, Fifth Avenue/CR 13A, Clinton Avenue from the vicinity of NYS Route 27A, Montauk Highway to the vicinity of Spur Drive North, addition of sidewalk on both sides of CR 13 where it did not exist, addition of pedestrian signals at all signals between CR 50 Union Avenue and Spur Drive North. Addition of a right turn lane at CR 13 and North and South Spur Drive	CR 13-29	DPW	х					

Table 35 - Congestion Mitigations

						Scenario			
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Tern
Crooked Hill Road (CR 13) (Continued)	CR13, Crooked Hill Road from Brook Avenue to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	DPW		Х			Х	
	• CR 13, Fifth Aveune at CR 100, Suffolk Aveune, Transportation Demand Management Study, consideration of using surface streets south of CR 100 to divert westbound to southbound left turns from the intersection of CR 13 and CR 100	CR 13-31	DPW		х				Х
	CR 13, Fifth Aveune at Candlewood Road preferred alternative still needs to be determined. Property acquisitions maybe required	CR 13-32	DPW		Х				Х
	• Improvements to CR13, Crooked Hill Road From CR 7, Wicks Road to the vicinity of CR 106, Campus Road, resurfacing, signal								
	reconstruction, final alternative to be determined	CR 13-33	DPW		Х			Х	
Bayshore Road (CR 57)	• Reconstruction of CR 57, Bay Shore Road, from NYS Route 27, Sunrise Highway, to NYS Route 231, Deer Park Avenue, reconstruction of	CD 57 34	DDW	V					
	CR 57, new sidewalks and drainage, pavement markings and rebuild of all signals between NYS 231 and NYS 27	CR 57-34	DPW	Х					
Motor Parkway (CR 67)	Construct a new north-south driveway between Kohl's/Home Depot/Wal-Mart shopping center and Motor Parkway	CR 67-35	SDP				Х		Х
	Reconstruction of CR 67 bridge over the LIE at exit 55	CR 67-36	DPW	Х					
	• Intersection improvement of CR 67 at Adams Avenue	CR 67-37	DPW	Х					
	• Reconstruction of CR 67, between LIE exit 55 and CR 17, Wheeler Road, rehabilitation and resurfacing of CR 67, Motor Parkway, from the								
	vicinity of the LIE South Service Road to CR 17 Wheeler Road. Reconstruction of the signals at CR 67 and Caleb's Path, and CR 17, sidewalk	CR 67-38	DPW	Х					
	was added to the north side of CR 67								
	• Intersection improvements at CR 17, Wheeler Road, at CR 67, Motor Parkway, preferred alternative still needs to be determined.	00.67.00	5514		.,				.,
	Property acquisitions may be required	CR 67-39	DPW		Х				Х
Suffolk Avenue (CR 100)	Should be continued to meet Long Island Avenue in a straight line to Commack Road with an overpass at Sagtikos Parkway	CR 100-40	CTF		Х				Х
` '	• Intersection improvements on CR 100, Suffolk Avenue, at Brentwood Road/Washington Avenue, widened CR 100 to include a eastbound								
	right turn lane and two westbound left turn lanes. Also widened Brentwood Road to a left turn lane, through lane and a shared	CR 100-41	DPW	х					
	through/right lane in both the northbound and southbound directions								
Campus Road/Community College Road (CR	• New signaled intersection and access to the proposed development site east of Sagtikos Parkway, aligning with the ramp above. Drivers								
106)	on Crooked Hill Road wishing to enter east of Sagtikos Parkway will use a new signalized intersection	CR 106-42	HTS				X		Х
	Provide additional access to and from southbound Sagtikos Parkway, new ramps and a signalized intersection to be constructed on west								
	side of parkway	CR 106-43	HTS			Х			Х
	• Intersection reconstruction at G-Road and Sagtikos Parkway exit ramp (Note: this mitigation will be a component of the project	CR 106-66	HTS		.,			,	
	identified by Map # CR 13-22)	CD 10C C7	LITC		X			Х	V
(1)(0.004)	Reconstrution of the southbound and northbound Sagitkos Parkway Interchange at G Road	CR 106-67	HTS		Х	.,		,,	Х
Deer Park Avenue (NYS 231)	At Long Island Avenue and Grand Boulevard and the intersection of Bay Shore Road at Howell's Road timing modifications	NYS 231-44A, 44B	ТО			Х		Х	
	• Intersection of Long Island Avenue at Deer Park Avenue westbound approach should be reconfigured to include an exclusive left turn	NYS 231-45	DPSC			Х			Х
	lane and a through/right lane								
LIE (I-495)	Provide access from eastbound LIE to Heartland Property, ramp from the LIE to be constructed	1495-46	HTS			Х			Х
LIE South Service Road	New access point to Heartland Property off LIE South Service Road west of Crooked Hill Road	LIE Serv47	HTS				X		Х
Sagtikos Parkway	Additional access to Sagtikos Parkway to be established northeast of proposed industrial area	SP-48	ВНР			Х			Х
	Construct one way service roads along Sagtikos Parkway between LIE and Long Island Avenue	SP-49A, 49B	SDP			Х			Х
	Interchange at Pine Aire Drive to be expanded	SP-50	ВНР			Х			X
	Additional access to the Sagtikos Parkway to be established from a road linking an upgraded Long Island Avenue west of Sagtikos	SP-51	ВНР			х			Х
	Parkway with an upgraded Suffolk Avenue east of Sagtikos Parkway								
	Sagtikos Parkway from Southern State Parkway to Long Island Avenue, add third lane in each direction on Sagtikos Parkway	SP-52	HTS			Х			Х
	• Sagtikos Parkway Interchange with Pine Aire Drive and Long Island Avenue, reconstruct interchange to accommodate new lanes on								
	Sagtikos Parkway; construct eastbound right turn lane and westbound left turn lane in conjunction with reconstruction of Pine Aire Drive								
	Interchange. Construct northbound Sagtikos Parkway off ramp to Pine Aire Drive only; construct southbound Sagtikos Parkway on ramp	SP-53	HTS			Х			Х
	from Pine Aire Drive only. Construct Diamond Interchange on Sagtikos Parkway at Long Island Avenue (extended). Signalize ramps at								
	intersections; extend Long Island Avenue from existing termini to Diamond Interchange with 2 lanes in each direction								
	• Sagtikos Parkway between Long Island Avenue and Campus Road, add third lane in each direction on Sagtikos Parkway. Construct								
	overpass and Diamond Interchange at G Road & Sagtikos Parkway; abandon existing northbound Sagtikos Parkway ramp at Crooked Hill	SP-54	HTS			Х			X
	Road; signalized intersections at ramps. Reconstruct G Road with intersection at entrance to Heartland Town Square								
!	• Widening the parkway between Southern State Parkway, NYS Route 25A including parallel roadways in the Towns of Islip and Smithtown	SP-55	04 -TIP			Х			Х
	• Sagtikos Parkway from Crooked Hill Road to LIE, add third lane in each direction on Sagtikos Parkway; reconstruct northbound Sagtikos								
	Parkway on ramp from Crooked Hill Road to permit truck to access only LIE. (This ramp is separated from Sagtikos Parkway and only takes traffic to LIE eastbound)	SP-56	HTS			Х			Х

Table 35 - Congestion Mitigations

						Scenario			
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Term
Sagtikos Parkway (Continued)	New on ramp to Sagtikos Parkway southbound from Heartland Town Square, construct collector-distributor (C-D) road parallel to Sagtikos Parkway southbound from first off ramp on Sagtikos Parkway to Heartland Town Square through Diamond Interchange at G-Road to allow on/off movements to be made on C-D road*	SP-57	HTS			х			Х
	Construct C-D road parallel to Sagtikos Parkway northbound from new Diamond Interchange to Crooked Hill Road overpass; all on/off movements from off ramp to Crooked Hill Road through new on ramp will be on C-D road*	SP-58	HTS			Х			Х
	Sagtikos Parkway northbound and southbound, extend widening of Sagtikos Parkway to three thru lanes from LIE to Northern State Parkway (northbound and southbound sides)	SP-59	HTS			Х			Х
	Median barrier improvement along Sagtikos Parkway	SP-60	04 -TIP	Х					
Long Island Avenue	Construct a partial or full interchange on the Sagtikos Parkway at Long Island Avenue	LIA-61	SDP			Х			Х
	Railroad to remain at current location	LIA-62	CTF	Х					
	• Intersection of Long Island Avenue and Executive Drive, add a separate left turn lane for the southbound approach	LIA-63	HTS				Х	Х	
Pine Aire Drive	Addition of second southbound left turn lane at Executive Drive	PAD-64	HTS				Х		Х
	Construction of eastbound right turn lane on the approach to the southbound Sagtikos Parkway ramp	PAD-65	HTS				Х		Х

Completed and Current Projects in the Study Area	BASELINE
Appendix 2 page 5 of Draft Sagtikos Regional Development Area Study (SRDAS) from SDP	X
Table 1 page 15 of Draft SRDAS Study from SDP	X
Table 2 page 19 of Draft SRDAS Study from SDP	X
Pages 22 and 23 bulleted items of Draft SRDAS Study from SDP	X
Table 4 page 28 of Draft SRDAS Study from SDP	X
TIP - Transportation Improvement Plan	X

NOTES:

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

BHP = Brentwood Hamlet Plan '76

CTF = Fourth Senate District Citizens task Force on Pilgrim/Edgewood State Property '84

SDP = Suffolk County Department of Planning Study Major Growth & Development Areas '06

TIP = Transportation Improvement Plan

CR = County Road

*Further evaluation of mitigation will be undertaken at end of Phase I Heartland redevelopment to confirm need

Table 36 - Congestion Mitigations, Baseline

Roadway	Mitigation	Man #	Origin	Baseline		Scenario		Short Term	Long Term
Kodaway	Mitigation	Map #	Origin	Ваѕенпе	A County	B State	C Other	Snort Term	Long Term
Commack Road (CR 4)	Reconstruction and resurfacing improvements from Julia Circle to LIE	CR 4-5	'06 -TIP	Х					
	Removing unused bridge structure, approx. 1500 feet south of Julia Circle	CR 4-6	'06 -TIP	Х					
	Reconstruction of traffic signals at Long Island Avenue, Marcus Boulevard, Quail Run Drive, Nicolls Road	CR 4-9A,9B,9C	ТО	Х					
	At the LIE South Service Road an exclusive eastbound and northbound right turn lanes are constructed	CR 4-10	ТО	Х					
	Reconstruction of the intersection at CR 57, Bayshore Road	CR 4-11	DPW	Х					
	Construct exclusive southbound right turn lane at Long Island Avenue	CR 4-12	DPSC	Х					
	Construct a northbound right turn lane at South Service Road to LIE at park and ride lot	CR 4-13	HTS	Х					
Wicks Road (CR 7)	• Reconstruction of CR 7, Wicks Road, Phase I from Blue Jay Drive to 700' N/O CR 67 Motor Parkway, reconstructed CR 7, add a second								
	southbound lane between LIE and Blue Jay Drive. Add a northbound right turn lane from CR 7 to eastbound LIE South Service Road.	CR 7-17A, 18A	'06 -TIP	X					
	Widened the LIE South Service Road west of CR 7 to add a right turn lane and thru Lane. Reconstructed CR 67 to add a westbound to	CR 7-17A, 18A	06-112	^					
	southbound left turn lane at CR 7. Rebuilt the signal at CR 7 and LIE South Service Road and CR 7 at CR 67								
	• Improvements to CR 7, Wicks Road, Phase II from the vicinity of Blue Jay Drive to the vicinity of CR 13, Fifth Avenue, widen road at north								
	entrance to college, signal rebuilds at CR 7 at Hancock Street, CR 7 at Heyward Avenue, CR 7 at CR 106, CR 7 at College Access Road and								
	new signals at CR 7 at Leahy Drive and CR 7 at Chapel Hill Drive. New parking lane on eastside of CR 7 between CR 106 and Blue Jay Drive.	CR 7-18A, 18B	DPW	Х					
	Additional southbound lane on CR 7 between Blue Jay Drive to Heyward Avenue, new southbound to westbound right turn lane at CR 7								
	and College Access Road								
	Construction of an area for Motor Carrier Unit of the Suffolk County Police Department to conduct inspection of area trucks	CR 13-28	DPW	Х					
Crooked Hill Road (CR 13)	approximately 300 feet south of the signalized driveway to Robert Street	CR 15-26	DPW	^					
	• Intersection improvements to CR 13, Fifth Avenue/CR 13A, Clinton Avenue from the vicinity of NYS Route 27A, Montauk Highway to the								
	vicinity of Spur Drive North, addition of sidewalk on both sides of CR 13 where it did not exist, addition of pedestrian signals at all signals	CR 13-29	DPW	X					
	between CR 50 Union Avenue and Spur Drive North. Addition of a right turn lanes at CR 13 and North and South Spur Drives								
Bayshore Road (CR 57)	• Reconstruction of CR 57, Bay Shore Road, from NYS Route 27, Sunrise Highway, to NYS Route 231, Deer Park Avenue, reconstruction of	CR 57-34	DPW	Х					
	CR 57, new sidewalks and drainage, pavement markings and rebuild of all signals between NYS 231 and NYS 27	CR 37-34	DPW	^					
Motor Parkway (CR 67)	Reconstruction of CR 67 bridge over the LIE at exit 55	CR 67-36	DPW	X					
	• Intersection improvement of CR 67 at Adams Avenue	CR 67-37	DPW	Х					
	• Reconstruction of CR 67, between LIE exit 55 and CR 17, Wheeler Road, rehabilitation and resurfacing of CR 67, Motor Parkway, from the								
	vicinity of the LIE South Service Road to CR 17 Wheeler Road. Reconstruction of the signals at CR 67 and Caleb's Path, and CR 17, sidewalk	CR 67-38	DPW	X					
	was added to the north side of CR67								
Suffolk Avenue (CR 100)	• Intersection improvements on CR 100, Suffolk Avenue, at Brentwood Road/Washington Avenue, widened CR 100 to include a eastbound					_			
	right turn lane and two westbound left turn lanes. Also widened Brentwood Road to a left turn lane, through lane and a shared	CR 100-41	DPW	X					
	through/right lane in both the northbound and southbound directions								
Sagtikos Parkway	Median barrier improvement along parkway	SP-60	04 -TIP	Х					
Long Island Avenue	Railroad to remain at current location	LIA-62	CTF	Х					

Completed and Current Projects in the Study Area	BASELINE
Appendix 2 page 5 of Draft Sagtikos Regional Development Area Study (SRDAS) from SDP	X
Table 1 page 15 of Draft SRDAS Study from SDP	X
Table 2 page 19 of Draft SRDAS Study from SDP	X
Pages 22 and 23 bulleted items of Draft SRDAS Study from SDP	X
Table 4 page 28 of Draft SRDAS Study from SDP	X
TIP - Transportation Improvement Plan	X

Table 38 - Congestion Mitigations, Scenario A - County

						Scenario			
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Term
	Develop two by-pass truck routes, one runs along the westside of the development between the Heartland Industrial Park and the								
Commack Road (CR 4)	Pilgrim State access at Commack Road and the second by-pass route on the eastside of the site will connect the Hearltand Industrial Park with G Road/Campus Road	CR 4-2A, 2B	HTS		Х				Х
	• Increase width on Commack Road under LIE by reconstructing LIE (I-495) overpass	CR 4-3	HTS		Х				Х
	• At the LIE service roads on northbound, southbound and eastbound approaches add a right turn lanes, also add one additional through lane on the eastbound and westbound approaches	CR 4-4	HTS		х				Х
	Construction of new pedestrian bridge, approx. 1500 feet south of Julia Court within limits of Edgewood Preserve	CR 4-7	DPW		Х			Х	
	Reconstruct Commack Road to a five-lane section from the LIE to Fish Path/Pilgram State access	CR 4-8	DPW		Х				Х
	Add signalized access at Commack Road and Fish Path/Pilgrim State access	CR 4-15	HTS		Х				Х
	Intersection improvements at Long Island Avenue	CR 4-16	HTS		Х				Х
Crooked Hill Road (CR 13)	Re-stripe Crooked Hill Road under the LIE to provide two northbound left turn lanes	CR 13-20	HTS		Х			Х	
	At LIE North Service Road add one southbound lane; reconstruct westbound approach (three lanes)	CR 13-21	HTS		Х			Х	
	Add additional southbound right turn lane at the LIE North Service Road	CR 13-21A	HTS/DPW		Х				Х
	Widening to four thru lanes plus turn lanes between the LIE and the exsisting Pilgram State entrance	CR 13-22	HTS/ DPW		Х			Х	
	• Existing Pilgrim State intersection will be reconstructed and a traffic signal installed. Eastbound approach will be expanded	CR 13-23	HTS		Х			Х	
	• South of Pilgrim State access, add third southbound lane on Crooked Hill Road in both directions from existing Pilgrim State access to Campus Road	CR 13-24	HTS		х				х
	• At Community College Drive, CR 106, add second left turn lane northbound; add second left turn lane westbound; add second eastbound	CR 13-26	HTS		Х			Х	
	CR13, Crooked Hill Road from Brook Avenue to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	DPW		Х			Х	
	• CR 13, Fifth Avenue at CR 100, Suffolk Avenue, Transportation Demand Management Study. Consideration of using surface streets south of CR 100 to divert westbound to southbound left turns from the intersection of CR 13 and CR 100	CR 13-31	DPW		х				Х
	• CR 13, Fifth Avenue at Candlewood Road preferred alternative still needs to be determined. Property acquisitions maybe required	CR 13-32	DPW		Х				Х
	• Improvements to CR13, Crooked Hill Road from CR 7, Wicks Road to the vicinity of CR 106, Campus Road, resurfacing, signal reconstruction, final alternative to be determined	CR 13-33	DPW		х			Х	
Motor Parkway (CR 67)	• Intersection improvements at CR 17, Wheeler Road, at CR 67, Motor Parkway, preferred alternative still needs to be determined. Property acquisitions maybe required	CR 67-39	DPW		х				Х
Suffolk Avenue (CR 100)	Should be continued to meet Long Island Avenue in a straight line to Commack Road with an overpass at Sagtikos Parkway	CR 100-40	CTF		Х				Х
Community College Drive (CR 106)	• Intersection reconstruction at G-Road and Sagtikos Parkway exit ramp (Note: this mitigation will be a component of the project identified by Map # CR 13-22)	CR 106-66	DPW		Х			Х	
	Reconstrution of the southbound and northbound Sagitkos Parkway Interchange at G Road	CR 106-67	HTS/DPW		Х				Х

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

BHP = Brentwood Hamlet Plan '76

CTF = Fourth Senate District Citizens task Force on Pilgrim/Edgewood State Property '84

SDP = Suffolk County Department of Planning Study Major Growth & Development Areas '06

TIP = Transportation Improvement Plan

CR = County Road

Table 40 - Congestion Mitigations, Scenario B - State

Don'd	Aditional	Mars #	Orinin	Paraline		Scenario		Chart Tarra	long To
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Tern
Crooked Hill Road (CR 13)	Construct a ramp connecting Crooked Hill Road to the LIE South Service Road	CR 13-39	SDP		_	Х			Х
	Over the Sagtikos Parkway, reconstruct Crooked Hill Road bridge to accommodate additional lanes on Sagtikos Parkway	CR 13-25	HTS			Х			Х
	• Reconstruct LIE eastbound and westbound ramps to southbound Sagtikos Parkway to allow trucks and cars off on Crooked Hill Road at								
	access to Heartland Town Square. Construct new exit ramps to Crooked Hill Road from westbound & eastbound LIE to Sagtikos Parkway.	CR 13-27	HTS			Х			Х
	Align new ramp with new signalized intersection at new access point								
Campus Road/Community College Road (CR	• Provide additional access to and from southbound Sagtikos Parkway, new ramps and a signalized intersection to be constructed on west	CD 10C 42	HTS			Х			Х
106)	side of Sagtikos Parkway	CR 106-43	HIS			^			^
Deer Park Avenue (NYS 231)	• At Long Island Avenue and Grand Boulevard and the intersection of Bay Shore Road at Howell's Road timing modifications	NYS 231-44A, 44B	ТО			Х		Х	
	• Intersection of Long Island Avenue at Deer Park Avenue westbound approach should be reconfigured to include an exclusive left turn	NYS 231-45	DPSC			Х			х
	lane and a through/right lane	1113 231-43	DF3C			^			^
LIE (I-495)	• Provide access from eastbound LIE to Heartland Property, ramp from the LIE to be constructed	1495-46	HTS			Х			Х
Sagtikos Parkway	Additional access to Sagtikos Parkway be established northeast of proposed industrial area	LIEServ47	BHP			Х			Х
	Construct one way service roads along Sagtikos Parkway between LIE and Long Island Avenue	SP-48	SDP			X			Х
	Interchange at Pine Aire Drive be expanded	SP-49A, 49B	BHP			X			Х
	• Additional access to the Sagtikos Parkway be established from a road linking an upgraded Long Island Avenue west of Sagtikos Parkway	SP-50	ВНР			Х			х
•	with an upgraded Suffolk Avenue east of Sagtikos Parkway	31-30	DITE			^			^
	• Sagtikos Parkway from Southern State Parkway to Long Island Avenue, add third lane in each direction on Sagtikos Parkway	SP-51	HTS			Х			Х
	• Sagtikos Parkway Interchange with Pine Aire Drive and Long Island Avenue, reconstruct interchange to accommodate new lanes on								
	Sagtikos Parkway; construct eastbound right turn lane and westbound left turn lane in conjunction with reconstruction of Pine Aire Drive								
	interchange. Construct northbound Sagtikos Parkway off ramp to Pine Aire Drive only; construct southbound Sagtikos Parkway on ramp	SP-52	HTS			Х			Х
	from Pine Aire Drive only. Construct Diamond Interchange on Sagtikos Parkway at Long Island Avenue (extended). Signalize ramps at								
	intersections extend Long Island Avenue from existing termini to Diamond Interchange with 2 lanes in each direction								
	• Sagtikos Parkway between Long Island Avenue and Campus Road, add third lane in each direction on Sagtikos Parkway. Construct								
	overpass and Diamond Interchange at G Road and Sagtikos Parkways; abandon existing northbound Sagtikos Parkway ramps at Crooked	SP-53	HTS			Х			Х
	Hill Road; signalized intersections at ramps. Reconstruct G Road with intersection at entrance to Heartland Town Square								
	• Widening the parkway between Southern State Parkway, NYS Route 25A including parallel roadways in the Towns of Islip and Smithtown	SP-54	04 -TIP			Х			Х
	• Sagtikos Parkway from Crooked Hill Road to LIE, add third lane in each direction on Sagtikos Parkway; reconstruct northbound Sagtikos								
	Parkway on ramp from Crooked Hill Road to permit truck to access ONLY LIE. (This ramp is separated from Sagtikos Parkway and only takes	SP-55	HTS			Х			Х
	traffic to LIE eastbound)								
	• New on ramp to Sagtikos Parkway southbound from Heartland Town Square, construct collector-distributor (C-D) road parallel to								
	Sagtikos Parkway southbound from first off ramp on Sagtikos Pakrway to Heartland Town Square through Diamond Interchange at G-Road	SP-56	HTS			Х			Х
	to allow on/off movements to be made on C-D road*								
	• Construct C-D road parallel to Sagtikos Parkway northbound from new Diamond Interchange to Crooked Hill Road overpass; all on/off	SP-57	HTS			X			х
	movements from off ramp to Crooked Hill Road through new on ramp will be on C-D road*	Jr -J/	1113			^			^
	• Sagtikos Parkway northbound and southbound, extend widening of Sagtikos Parkway to three thru lanes from LIE to Northern State	SP-58	HTS			Х			х
	Parkway (northbound and southbound sides)	J1 J0	1113			^			^
Long Island Avenue	Construct a partial or full interchange on the Sagtikos Parkway at Long Island Avenue	LIA-61	SDP			X			Х

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

BHP = Brentwood Hamlet Plan '76

CTF = Fourth Senate District Citizens task Force on Pilgrim/Edgewood State Property '84

SDP = Suffolk County Department of Planning Study Major Growth & Development Areas '06

TIP = Transportation Improvement Plan

CR = County Road

*Further evaluation of mitigation will be undertaken at end of Phase I Heartland redevelopment to confirm need

Table 41 - Congestion Mitigations, Scenario C - Other

On and com-	Agistronation	N/1 #	Outsin	Basslins		Scenario	•	Chart Tarre	1 T
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Snort Term	Long Term
Commack Road (CR 4)	• Additional access roadways linking the northern portion of Heartland Industrial Park to Heartland Town Square and linking to both Commack Road, CR 4 and Campus Road/G Road.	CR 4-1	ВНР				х		Х
	• Prevent Heartland Property traffic from using existing CR 4, Commack Road entrance to Pilgrim State Psychiatric Center by the installation of a card-activated access controlled gate	CR 4-14	HTS				Х	Х	
	Intersection improvements at Grand Boulevard	CR 4-17	HTS				Х	Х	
Motor Parkway (CR 67)	Construct a new north-south driveway between Kohl's/Home Depot/Wal-Mart shopping center and Motor Parkway	CR 67-35	SDP				Х		Х
Campus Road/Community College Road (CR 106)	• New signaled intersection and access to the proposed development site east of Sagtikos Parkway, aligning with the ramp above. Drivers on Crooked Hill Road wishing to enter east of Sagtikos Parkway will use a new signalized intersection	CR 106-42	HTS				Х		Х
LIE South Service Road	New access point to Heartland Property off LIE South Service Road west of Crooked Hill Road	LIEServ47	HTS				Х		Х
Long Island Avenue	• Intersection of Long Island Avenue and Executive Drive, add a separate left turn lane for the southbound approach	LIA-63	HTS				Х	Х	
Pine Aire Drive	Addition of second southbound left turn lane at Executive Drive	PAD-64	HTS				Х		Х
	Construction of eastbound right turn lane on the approach to the southbound Sagtikos Parkway ramp	PAD-65	HTS				Х		X

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

BHP = Brentwood Hamlet Plan '76

SDP = Suffolk County Department of Planning Study Major Growth & Development Areas '06

CR = County Road

Table 42 - Congestion Mitigations, Short Term

Donature	Adiaination	0.000 #	Outsin	Baseline		Scenario		Short	Long
Roadway	Mitigation	Мар #	Origin	Баѕенне	A County	B State	C Other	Term	Term
Commack Road (CR 4)	• Construction of new pedestrian bridge, approx. 1500 feet south of Julia Circle within limits of Edgewood Preserve	CR 4-7	DPW		Х			Х	
	• Prevent Heartland Property traffic from using existing CR 4, Commack Road entrance to Pilgrim State Psychiatric Center by the installation of a card-activated access controlled gate	CR 4-14	HTS				х	Х	
	Intersection improvements at Grand Boulevard	CR 4-17	HTS				Х	Χ	
Crooked Hill Road (CR 13)	• Re-stripe Crooked Hill Road under the LIE to provide either a second southbound lane or two northbound left turn lanes	CR 13-20	HTS		Х			Χ	
	Widening to four thru lanes plus turn lanes between the LIE and the Campus Road, CR106	CR 13-22	HTS/ DPW		Х			Х	
	• Existing Pilgrim State intersection will be reconstructed and a traffic signal installed. Eastbound approach will be expanded	CR 13-23	HTS		Х			Х	
	• At Community College Drive, CR 106, add second left turn lane northbound; add second left turn lane westbound; add second eastbound left turn lane; reconstruct intersection	CR 13-26	HTS		X			Х	
	• CR13, Crooked Hill Road from Brook Avenue to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	DPW		Х			Х	
	• Improvements to CR13, Crooked Hill Road From CR 7, Wicks Road to the vicinity of CR 106, Campus Road, resurfacing, signal reconstruction, final alternative to be determined	CR 13-33	DPW		Х			Х	
Community College Drive (CR 106)	• Intersection reconstruction at G-Road and Sagtikos Parkway exit ramp (Note: this mitigation will be a component of the project identified by Map # CR 13-22)	CR 106-66	DPW		Х			Х	
Deer Park Avenue (NYS 231)	• At Long Island Avenue and Grand Boulevard and the intersection of Bay Shore Road at Howell's Road timing modifications	NYS 231-44A, 44B	TO			Х		Χ	
Long Island Avenue	• Intersection of Long Island Avenue and Executive Drive, add a separate left turn lane for the southbound approach	LIA-63	HTS				Х	Х	

NOTES:

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

CR = County Road

Table 43 - Congestion Mitigations, Long-Term

Roadway	Mitigation	Map #	Origin	Baseline		Scenario		Short Term	Long Term
nouuwuy		ινι υ ρ #	Origin	Duseillie	A County	B State	C Other	Short reim	Long Term
Commack Road (CR 4)	Additional access roadways linking the northern portion of Heartland Industrial Park to Heartland Town Square and linking to both Commack Road, CR 4 and Campus Road/G Road	CR 4-1	ВНР				х		×
	• Develop two by-pass truck routes, one runs along the westside of the development between the Heartland Industrial Park and the								
	Pilgrim State access at Commack Road and the second by-pass route on the eastside of the site will connect the Hearltand Industrial	CR 4-2A, 2B	HTS		Х				Х
	Park with G Road/Campus Road		_						
	Increase width on Commack Road under LIE by reconstructing LIE (I-495) overpass	CR 4-3	HTS		Х				Х
	• At the LIE service roads on northbound, southbound and eastbound approaches add a right turn lanes, also add one additional through lane on the eastbound and westbound approaches	CR 4-4	HTS		Х				х
	Reconstruct Commack Road to a five-lane section from the LIE to Fish Path/Pilgram State Access	CR 4-8	DPW	†	X				Х
	Add signalized access at Commack Road and Fish Path/Pilgrim State access	CR 4-15	HTS	†	X				X
	Intersection improvements at Long Island Avenue	CR 4-16	HTS		X				X
Crooked Hill Road (CR 13)	Construct a ramp connecting Crooked Hill Road to the LIE South Service Road	CR 13-19	SDP		^	Х			X
Crooked Hill Road (CR 13)		CR 13-19	HTS		Х	^			X
	At LIE North Service Road; add one southbond lane; reconstruct westbound approach (three lanes) Add additional southbound right turn lane at the LIE North Service Road	CR-13-21A	HTS/DPW	+	X				X
		CR-13-21A	HTS/DPW		X				^
	South of Pilgrim State access, add third southbound lane on Crooked Hill Road in both directions from existing Pilgrim State access to Campus Road	CR 13-24	HTS		Х				х
	Over the Sagtikos Parkway, reconstruct Crooked Hill Road bridge to accommodate additional lanes on Sagtikos Parkway	CR 13-25	HTS			Х			Х
	• Reconstruct LIE eastbound and westbound ramps to southbound Sagtikos Parkway to allow trucks and cars off on Crooked Hill Road at								
	access to Heartland Town Square. Construct new exit ramps to Crooked Hill Road from westbound & eastbound LIE to Sagtikos Parkway.	CR 13-27	HTS			Х			х
	Align new ramp with new signalized intersection at new access point								
<u>s</u>	• CR 13, Fifth Avenue at CR 100, Suffolk Avenue, Transportation Demand Management Study. Consideration of using surface streets	CR 13-31	DPW		X				x
	south of CR 100 to divert westbound to southbound left turns from the intersection of CR 13 and CR 100								
	• CR 13, Fifth Avenue at Candlewood Road preferred alternative still needs to be determined. Property acquisitions maybe required	CR 13-32	DPW		X				Х
Motor Parkway (CR 67)	Construct a new north-south driveway between Kohl's/Home Depot/Wal-Mart shopping center and Motor Parkway	CR 67-35	SDP				Х		Х
	• Intersection improvements at CR 17, Wheeler Road, at CR 67, Motor Parkway, preferred alternative still needs to be determined.	CR 67-39	DPW		×				Х
	Property acquisitions maybe required								
Suffolk Avenue (CR 100)	• Should be continued to meet Long Island Avenue in a straight line to Commack Road with an overpass at Sagtikos Parkway	CR 100-40	CTF		X				Х
Campus Road/Community College Road (CR 106)	New signaled intersection and access to the proposed development site east of Sagtikos Parkway, aligning with the ramp above. Drivers on Crooked Hill Road wishing to enter east of Sagtikos Parkway will use a new signalized intersection	CR 106-42	HTS				Х		х
•	Provide additional access to and from southbound Sagtikos Parkway, new ramps and a signalized intersection to be constructed on	CR 106-43	HTS			х			х
	west side of parkway	CD 10C C7	LITC/DDM/						
D P A /ADVC 224)	Reconstrution of the southbound and northbound Sagitkos Parkway Interchange at G Road Interception of Long Island Avenue at Door Park Avenue weethound approach about the reconfigured to include an evaluation left turns.	CR 106-67	HTS/DPW						Х
Deer Park Avenue (NYS 231)	• Intersection of Long Island Avenue at Deer Park Avenue westbound approach should be reconfigured to include an exclusive left turn lane and a through/right lane	NYS 231-45	DPSC			Х			х
LIE (I-495)	Provide access from eastbound LIE to Heartland Property, ramp from the LIE to be constructed	1495-46	HTS			Х			Х
LIE South Service Road	New access point to Heartland Property off LIE South Service Road west of Crooked Hill Road	LIE Serv47	HTS				Х		Х
Sagtikos Parkway	Additional access to Sagtikos Parkway be established northeast of proposed industrial area	SP-48	ВНР			Х			Х
	Construct one way service roads along Sagtikos Parkway between LIE and Long Island Avenue	SP-49A, 49B	SDP			Х			Х
	Interchange at Pine Aire Drive be expanded	SP-50	ВНР			Х			Х
	Additional access to the Sagtikos Parkway be established from a road linking an upgraded Long Island Avenue west of Sagtikos	25	5115			.,			.,
	Parkway with an upgraded Suffolk Avenue east of Sagtikos Parkway	SP-51	ВНР			X			Х
	Sagtikos Parkway from Southern State Parkway to Long Island Avenue, add third lane in each direction on Sagtikos Parkway	SP-52	HTS			Х			Х
	Sagtikos Parkway Interchange with Pine Aire Drive and Long Island Avenue, reconstruct interchange to accommodate new lanes on								
	Sagtikos Parkway; construct eastbound right turn lane and westbound left turn lane in conjunction with reconstruction of Pine Aire								
	Drive Interchange. Construct northbound Sagtikos Parkway off ramp to Pine Aire Drive only; construct southbound Sagtikos Parkway on	SP-53	HTS			x			Х
	ramp from Pine Aire Drive only. Construct Diamond Interchange on Sagtikos Parkway at Long Island Avenue (extended). Signalize ramps	2. 00							
	at intersections. Extend Long Island Avenue from existing termini to Diamond Interchange with 2 lanes in each direction								

Table 43 - Congestion Mitigations, Long-Term

Donderson	Military and a second s	1.4 mm #	Outsin	Baseline		Scenario		Chart Tarre	/ T
Roadway	Mitigation	Map #	Origin	Baseline	A County	B State	C Other	Short Term	Long Term
Sagtikos Parkway Continued	• Sagtikos Parkway between Long Island Avenue and Campus Road, add third lane in each direction on Sagtikos Parkway. Construct								
	overpass and Diamond Interchange at G Road & Sagtikos Parkway; abandon existing northbound Sagtikos Parkway ramps at Crooked	SP-54	HTS			Х			х
	Hill Road; signalized intersections at ramps. Reconstruct G Road with intersection at entrance to Heartland Town Square								
	Widening the parkway between Southern State Parkway, NYS Route 25A including parallel roadways in the Towns of Islip and	SP-55	04 -TIP			V			V
	Smithtown	38-33	04 - HP			Α .			^
	• Sagtikos Parkway from Crooked Hill Road to LIE, add third lane in each direction on Sagtikos Parkway; reconstruct northbound								
	Sagtikos Parkway on ramp from Crooked Hill Road to permit truck to access ONLY LIE. (This ramp is separated from Sagtikos Parkway	SP-56	HTS			Х			Х
	and only takes traffic to LIE eastbound)								
	• New on ramp to Sagtikos Parkway southbound from Heartland Town Square, construct collector-distributor (C-D) road parallel to								
	Sagtikos Parkway southbound from first off ramp on Sagtikos Parkway to Heartland Town Square through Diamond Interchange at G-	SP-57	HTS			Х			х
	Road to allow on/off movements to be made on C-D road*								
	• Construct C-D road parallel to Sagtikos Parkway northbound from new Diamond Interchange to Crooked Hill Road overpass; all on/off	SP-58	HTS			V			
	movements from off ramp to Crooked Hill Road through new on ramp will be on C-D road*	34-30	піз			^			^
	• Sagtikos Parkway northbound and southbound, extend widening of Sagtikos Parkway to three thru lanes from LIE to Northern State	SP-59	HTS			V			V
	Parkway (northbound and southbound sides)	3P-39	ніз			Α .			^
Long Island Avenue	Construct a partial or full interchange on the Sagtikos Parkway at Long Island Avenue	LIA-61	SDP			Х			Х
Pine Aire Drive	Addition of second southbound left turn lane at Executive Drive	PAD-64	HTS				Х		X
	Construction of eastbound right turn lane on the approach to the southbound Sagtikos Parkway ramp	PAD-65	HTS				X		X

HTS = Heartland Town Square DEIS 3/09

DPSC = Deer Park Shopping Center Traffic Mitigations

TO = Tanger Outlet Traffic Mitigations

DPW = Suffolk County Department of Public Works

BHP = Brentwood Hamlet Plan '76

CTF = Fourth Senate District Citizens task Force on Pilgrim/Edgewood State Property '84

SDP = Suffolk County Department of Planning Study Major Growth & Development Areas '06

TIP = Transportation Improvement Plan

CR = County Road

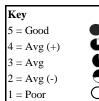
*Further evaluation of mitigation will be undertaken at end of Phase I Heartland redevelopment to confirm need

Baseline - Technical Analysis Tool

	baseline Teelinieal Analysis 1001						Eva	luatio	n Crit	teria																
			Evaluation Criteria Ability to Ability to Protect A								Ability to Minimize															
			\mathbf{N}	Ianage	•	th		-				dgetar														
				Performance Measure				Environmental Performance Measure				rforman														
ROADWAY	MITIGATION	Map#	1. Capacity Improvements	2. Proximity to Development Areas (Innovation Zones)	3. Consistency with Comp. Plans	Average Sub-score*	1. Linear Feet along open space/parkland	2. Increase in impermeable surface	3. Ability to remediate storm water runoff	Average Sub-score*	1. Reciprocal Funding	2. Value Capture	3. Long Term Maintenance	Average Sub-score*	. vc1 age	Total Average Score*										
Commack Road (CR 4)	Reconstruction and resurfacing improvements from Julia Circle to LIE	CR 4-5	2	4	2	3	2	5	3	4	a	b	3	3	3											
Commack Road (CR 4)	Removing unused bridge structure, approx. 1500 feet south of Julia Circle	CR 4-6	1	3	3	2	3	5	1	3	a	b	5	5	3											
,	Reconstruction of traffic signals at Long Island Avenue, Marcus Boulevard, Quail Run Drive, Nicolls Road	CR 4-9A,9B,9C	3	4	2	3	5	5	1	4	a	b	4	4	4											
	At the LIE South Service Road an exclusive eastbound and northbound right turn lanes are constructed	CR 4-10	5	4	2	4	5	1	5	4	a	b	1	1	3											
	Reconstruction of the intersection at CR 57, Bayshore Road	CR 4-11	3	3	2	3	5	3	5	4	а	b	3	3	3											
	Construct exclusive southbound right turn lane at Long Island Avenue	CR 4-12	4	4	2	3	5	3	5	4	а	b	3	3	3											
	Construct a northbound right turn lane at South Service Road to LIE at park and ride lot	CR 4-13	4	4	2	3	5	3	5	4	а	b	3	3	3											
Wicks Road (CR 7)	• Reconstruction of CR 7, Wicks Road, Phase I from Blue Jay Drive to 700' N/O CR 67 Motor Parkway, reconstructed CR 7, add a second										1															
,	southbound lane between LIE and Blue Jay Drive. Add a northbound right turn lane from CR 7 to eastbound LIE South Service Road.													i l		_										
	Widened the LIE South Service Road west of CR 7 to add a right turn lane and thru Lane. Reconstructed CR 67 to add a westbound to	CR 7-17A, 18A	5	4	2	4	5	1	5	4	а	b	1	1	3											
	southbound left turn lane at CR 7. Rebuilt the signal at CR 7 and LIE South Service Road and CR 7 at CR 67													i l		l										
	• Improvements to CR 7, Wicks Road, Phase II from the vicinity of Blue Jay Drive to the vicinity of CR 13, Fifth Avenue, widen road at north										 	+		\vdash												
	entrance to college, signal rebuilds at CR 7 at Hancock Street, CR 7 at Heyward Avenue, CR 7 at CR 106, CR 7 at College Access Road and													i l		ł										
	new signals at CR 7 at Leahy Drive and CR 7 at Chapel Hill Drive. New parking Jane on eastside of CR 7 between CR 106 and Blue Jay Drive.	CR 7-18A, 18B	5	4	2	4	5	1	5	4	а	b	1	1	3											
	Additional southbound lane on CR 7 between Blue Jay Drive to Heyward Avenue, new southbound to westbound right turn lane at CR 7 and	CK / 10A, 10B		-		7	3	_		_	۵		-	(⁻	, , ,											
	College Access Road													i l		l										
Crooked Hill Road (CR 13)	• Construction of an area for Motor Carrier Unit of the Suffolk County Police Department to conduct inspection of area trucks approximately		+	+-	+-	\vdash	\vdash	+-	_		 		\vdash								 	+		$\vdash \!$		
Crooked Hill Road (CR 13)		CR 13-28	2	2	2	2	4	3	5	4	а	b	2	2	3	•										
	300 feet south of the signalized driveway to Robert Street • Intersection improvements to CR 13, Fifth Avenue/CR 13A, Clinton Avenue from the vicinity of NYS Route 27A, Montauk Highway to the										 	+		\longmapsto	-											
		CD 13 30	١,	1	_	,	_	,	_	4		h	1		_											
	vicinity of Spur Drive North, addition of sidewalk on both sides of CR 13 where it did not exist, addition of pedestrian signals at all signals	CR 13-29	2	1	2	2	5	3	4	4	а	b	3	3	3	\mathbf{U}										
- 1 - 1()	between CR 50 Union Avenue and Spur Drive North. Addition of a right turn lanes at CR 13 and North and South Spur Drives										 	_		∔												
Bayshore Road (CR 57)	• Reconstruction of CR 57, Bay Shore Road, from NYS Route 27, Sunrise Highway, to NYS Route 231, Deer Park Avenue, reconstruction of CR	CR 57-34	3	2	2	2	5	3	5	4	а	b	3	3	3	•										
	57, new sidewalks and drainage, pavement markings and rebuild of all signals between NYS 231 and NYS 27		_								↓	 '		lacksquare	_											
Motor Parkway (CR 67)	Reconstruction of CR 67 bridge over the LIE at exit 55	CR 67-36	3	2		2	5	4	5	5	а	b	2	2	3											
	Intersection improvement of CR 67 at Adams Avenue	CR 67-37	2	2	2	2	5	3	5	4	а	b	3	3	3	\blacksquare										
	• Reconstruction of CR 67, between LIE exit 55 and CR 17, Wheeler Road, rehabilitation and resurfacing of CR 67, Motor Parkway, from the													1)												
	vicinity of the LIE South Service Road to CR 17 Wheeler Road. Reconstruction of the signals at CR 67 and Caleb's Path, and CR 17, sidewalk	CR 67-38	4	4	2	3	4	3	5	4	а	b	3	3	3											
	was added to the north side of CR67										—	 '		igspace												
Suffolk Avenue (CR 100)	• Intersection improvements on CR 100, Suffolk Avenue, at Brentwood Road/Washington Avenue, widened CR 100 to include a eastbound													1)		_										
	right turn lane and two westbound left turn lanes. Also widened Brentwood Road to a left turn lane, through lane and a shared	CR 100-41	5	3	2	3	5	3	5	4	а	b	3	3	3	lacksquare										
	through/right lane in both the northbound and southbound directions										<u> </u>	<u> </u>		ш												
Sagtikos Parkway	Median barrier improvement along parkway	SP-60	3	4	2	3	1	5	1	2	а	b	4	4	3											
Long Island Avenue	Railroad to remain at current location	LIA-62		3	2	2	5	5	1 -		1			4 - T		4)										

Notes: a - Reciprocal funding not known at this time.

b - Value capture not known at this time.

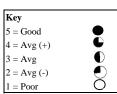


Scenario A - Technical Analysis Tool

				Manage			Envi	Ability t	o Protectal Resou	t irces	1	Budgetai	o Minim ry Impa	cts		
ROADWAY	MITIGATION	Map #	1. Capacity Improvements	2. Proximity to Development Areas (Innovation Zones)	3. Consistency Comp. Plans	Average Sub-score*	1. Linear Feet along open space/parkland (zone of disturbance)	2. Increase in impermeable surface	as 3. Ability to remediate storm M water runoff	Average Sub-score*	1. Reciprocal Funding	2. Value Capture	nce 3. Long Term Maintenance	Average Sub-score*	Total Average Score	Total Average Score*
Commack Road (CR 4)	Develop two by-pass truck routes, one runs along the westside of the development between the Heartland Industrial Park and the Pilgrim State access at Commack Road and the second by-pass route on the eastside of the site will connect the Hearltand Industrial Park with G Road/Campus Road	CR 4-2A, 2B	5	5	2	4	5	1	5	4	a	b	1	1	3	•
	• Increase width on Commack Road under LIE by reconstructing LIE (I-495) overpass	CR 4-3	5	4	2	4	5	3	5	4	a	b	1	1	3	•
	• At the LIE service roads on northbound, southbound and eastbound approaches add a right turn lanes, also add one additional through lane on the eastbound and westbound approaches	CR 4-4	5	4	2	4	5	2	5	4	a	b	1	1	3	•
	Construction of new pedestrian bridge, approx. 1500 feet south of Julia Court within limits of Edgewood Preserve	CR 4-7	1	1	2	1	3	4	1	3	1	4	2	2	2	•
	Reconstruct Commack Road to a five-lane section from the LIE to Fish Path/Pilgram State access	CR 4-8	5	4	4	4	5	1	4	3	1	2	4	2	3	•
	Add signalized access at Commack Road and Fish Path/Pilgrim State access	CR 4-15	4	5	4	4	5	5	1	4	1	3	3	2	3	
	Intersection improvements at Long Island Avenue	CR 4-16	4	5	2	4	5	2	4	4	1	3	3	3	3	
Crooked Hill Road (CR 13)	Re-stripe Crooked Hill Road under the LIE to provide two northbound left turn lanes	CR 13-20	4	5	3	4	5	5	1	4	1	5	2	3	4	C
	At LIE North Service Road add one southbound lane; reconstruct westbound approach (three lanes)	CR 13-21	4	5	3	4	5	2	4	4	1	3	3	2	3	•
	Add additional southbound right turn lane at the LIE North Service Road	CR 13-21A	4	5	3	4	5	2	4	4	a	b	3	3	4	•
	Widening to four thru lanes plus turn lanes between the LIE and the exsisting Pilgram State entrance	CR 13-22	5	5	4	5	5	1	4	3	1	1	4	2	3	•
	Existing Pilgrim State intersection will be reconstructed and a traffic signal installed. Eastbound approach will be expanded	CR 13-23	4	5	4	4	4	2	4	3	1	2	4	2	3	•
	South of Pilgrim State access, add third southbound lane on Crooked Hill Road in both directions from existing Pilgrim State access to Campus Road	CR 13-24	5	4	2	4	4	2	5	4	а	b	3	3	4	•
	• At Community College Drive, CR 106, add second left turn lane northbound; add second left turn lane westbound; add second eastbound	CR 13-26	4	5	4	4	3	2	4	3	1	1	4	2	3	•
	• CR13, Crooked Hill Road from Brook Avenue to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	2	2	2	2	5	5	1	4	1	3	2	2	3	•
	• CR 13, Fifth Avenue at CR 100, Suffolk Avenue, Transportation Demand Management Study. Consideration of using surface streets south of CR 100 to divert westbound to southbound left turns from the intersection of CR 13 and CR 100	CR 13-31	3	3	2	3	5	1	3	3	а	b	3	3	3	•
	CR 13, Fifth Avenue at Candlewood Road preferred alternative still needs to be determined. Property acquisitions maybe required	CR 13-32	2	2	2	2	2	2	2	2	a	b	3	3	2	•
	• Improvements to CR13, Crooked Hill Road from CR 7, Wicks Road to the vicinity of CR 106, Campus Road, resurfacing, signal reconstruction, final alternative to be determined	CR 13-33	5	3	3	4	5	5	1	4	1	5	3	3	4	C
Motor Parkway (CR 67)	• Intersection improvements at CR 17, Wheeler Road, at CR 67, Motor Parkway, preferred alternative still needs to be determined. Property acquisitions maybe required	CR 67-39	2	2	2	2	2	2	2	2	a	b	3	3	2	•
Suffolk Avenue (CR 100)	Should be continued to meet Long Island Avenue in a straight line to Commack Road with an overpass at Sagtikos Parkway	CR 100-40	5	4	2	4	3	1	5	3	а	b	3	3	3	•
Community College Drive (CR 106)	• Intersection reconstruction at G-Road and Sagtikos Parkway exit ramp (Note: this mitigation will be a component of the project identified by Map # CR 13-22)	CR 106-66	4	5	4	4	4	2	4	3	1	3	3	2	3	•
	Reconstrution of the southbound and northbound Sagitkos Parkway Interchange at G Road	CR 106-67	5	4	2	4	4	3	5	4	а	b	3	3	4	•

Notes: a - Reciprocal funding not known at this time.

b - Value capture not known at this time.



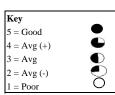
Evaluation Criteria

Scenario B - Technical Analysis Tool

	Evaluation Criteria									A 1-1114 4	1					
			Ability to Ability to Protect Manage Growth Environmental Resources							Ability to Budgeta						
					e Growt nce Meas		Environmental Resources Performance Measure					4				
ROADWAY	MITIGATION	Map#	1. Capacity Improvements	2. Proximity to Development Areas (Innovation Zones)	3. Consistency with Comp. Plans	Average Sub-score*	1. Linear Feet along open space/parkland (zone of disturbance)	2. Increase in impermeable surface	3. Abil water r	Average Sub-score*	1. Reciprocal Funding	2. Value Capture	nce 3. Long Term Maintenance	Average Sub-score*	ŗ	Total Average Score*
Crooked Hill Road (CR 13)	Construct a ramp connecting Crooked Hill Road to the LIE South Service Road	CR 13-39	5	4	2	4	4	3	5	4	а	b	3	3	4	•
()	Over the Sagtikos Parkway, reconstruct Crooked Hill Road bridge to accommodate additional lanes on Sagtikos Parkway	CR 13-25	5	4	2	4	4	3		4	a	b	2	2	3	Ō
	Reconstruct LIE eastbound and westbound ramps to southbound Sagtikos Parkway to allow trucks and cars off on Crooked Hill Road at	5 25 2 5		† ·	1 -	† ·	1 '		+ -	<u> </u>	<u> </u>		1	 		T
	access to Heartland Town Square. Construct new exit ramps to Crooked Hill Road from westbound & eastbound LIE to Sagtikos Parkway.	CR 13-27	5	4	2	4	4	3	5	4	a	b	1	1	3	•
İ	Align new ramp with new signalized intersection at new access point														i '	
Campus Road/Community College Road (CR	• Provide additional access to and from southbound Sagtikos Parkway, new ramps and a signalized intersection to be constructed on west	CD 10C 12	5	4	2	1	1	2	-	1		1.	3	1 2		
106)	side of Sagtikos Parkway	CR 106-43	3	4	2	4	4	3	3	4	a	D	3	3	4	
Deer Park Avenue (NYS 231)	At Long Island Avenue and Grand Boulevard and the intersection of Bay Shore Road at Howell's Road timing modifications	NYS 231-44A, 44B	3	3	2	3	5	5	1	4	a	b	4	4	3	•
	• Intersection of Long Island Avenue at Deer Park Avenue westbound approach should be reconfigured to include an exclusive left turn lane	NYS 231-45	1	3	2	3	-	2	5	1	а	h	3	2	4	
	and a through/right lane	N13 231-43	4	3		3	J	3	J	4	а	b	3	3	4	
LIE (I-495)	Provide access from eastbound LIE to Heartland Property, ramp from the LIE to be constructed	1495-46	5	5	2	4	3	1	5	3	а	b	3	3	3	•
Sagtikos Parkway	Additional access to Sagtikos Parkway be established northeast of proposed industrial area	LIEServ47	5	5	2	4	3	1	5	3	а	b	3	3	3	
	Construct one way service roads along Sagtikos Parkway between LIE and Long Island Avenue	SP-48	5	5	2	4	1	1	5	2	а	b	3	3	3	•
	Interchange at Pine Aire Drive be expanded	SP-49A, 49B	5	5	2	4	4	3	5	4	а	b	3	3	4	•
	• Additional access to the Sagtikos Parkway be established from a road linking an upgraded Long Island Avenue west of Sagtikos Parkway	SP-50	5	4	2	4	4	3	5	4	а	b	3	3	4	•
	with an upgraded Suffolk Avenue east of Sagtikos Parkway					<u> </u>	<u> </u>			<u> </u>					<u> </u>	lacksquare
	Sagtikos Parkway from Southern State Parkway to Long Island Avenue, add third lane in each direction on Sagtikos Parkway	SP-51	5	4	2	4	4	1	5	3	а	b	3	3	3	•
	Sagtikos Parkway Interchange with Pine Aire Drive and Long Island Avenue, reconstruct interchange to accommodate new lanes on														i	ļ
I	Sagtikos Parkway; construct eastbound right turn lane and westbound left turn lane in conjunction with reconstruction of Pine Aire Drive														i '	_
1	interchange. Construct northbound Sagtikos Parkway off ramp to Pine Aire Drive only; construct southbound Sagtikos Parkway on ramp	SP-52	5	4	2	4	1	1	5	2	а	b	2	3	3	•
	from Pine Aire Drive only. Construct Diamond Interchange on Sagtikos Parkway at Long Island Avenue (extended). Signalize ramps at														i '	
	intersections extend Long Island Avenue from existing termini to Diamond Interchange with 2 lanes in each direction														 '	<u> </u>
	• Sagtikos Parkway between Long Island Avenue and Campus Road, add third lane in each direction on Sagtikos Parkway. Construct														1 . '	
	overpass and Diamond Interchange at G Road and Sagtikos Parkways; abandon existing northbound Sagtikos Parkway ramps at Crooked Hill	SP-53	5	4	2	4	1	3	5	3	а	b	3	3	3	•
	Road; signalized intersections at ramps. Reconstruct G Road with intersection at entrance to Heartland Town Square	CD 5.4		! -		+ .	—				1	+ .	-		\vdash	
	• Widening the parkway between Southern State Parkway, NYS Route 25A including parallel roadways in the Towns of Islip and Smithtown	SP-54	5	5	2	4	1	3	5	3	а	b	3	3	3	•
	• Sagtikos Parkway from Crooked Hill Road to LIE, add third lane in each direction on Sagtikos Parkway; reconstruct northbound Sagtikos	CD EE	-			1 ,	1	2	_				2		1 , '	•
	Parkway on ramp from Crooked Hill Road to permit truck to access ONLY LIE. (This ramp is separated from Sagtikos Parkway and only takes	SP-55	5	4	2	4	1	3	5	3	а	В	3	3	3	
	traffic to LIE eastbound) • New on ramp to Sagtikos Parkway southbound from Heartland Town Square, construct collector-distributor (C-D) road parallel to Sagtikos										+			+	┢──	
	Parkway southbound from first off ramp on Sagtikos Pakrway to Heartland Town Square through Diamond Interchange at G-Road to allow	SP-56	5	4	2	1	1	2	5	2	3	h	3	2	3	•
	on/off movements to be made on C-D road*	Ji -30		-		"		,			a					_
	Construct C-D road parallel to Sagtikos Parkway northbound from new Diamond Interchange to Crooked Hill Road overpass; all on/off					1	1		+	1	1	+	-	+	$\vdash \vdash$	
	movements from off ramp to Crooked Hill Road through new on ramp will be on C-D road*	SP-57	5	4	2	4	2	3	5	3	а	b	3	3	3	•
	Sagtikos Parkway northbound and southbound, extend widening of Sagtikos Parkway to three thru lanes from LIE to Northern State						1		1		†			+ -	\vdash	
	Parkway (northbound and southbound sides)	SP-58	5	4	2	4	2	3	5	3	а	b	3	3	3	•
	Construct a partial or full interchange on the Sagtikos Parkway at Long Island Avenue	LIA-61	5	4	2	4	1	3	5	4	а	b	3	3	4	•

Notes: a - Reciprocal funding not known at this time.

b - Value capture not known at this time.

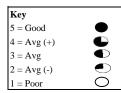


Scenario C - Technical Analysis Tool

			Ability to				Ability to Protect Ability to Minimize							1		
	Manage Growth						Environmental Resources Budgetary Impacts								1	
				Performar	ice Measu	ire	Performance Measure				P	Performan	ire			
ROADWAY	MITIGATION	Map#	1. Capacity Improvements	2. Proximity to Developmen Areas (Innovation Zones)	3. Consistency with Comp. Plans	Average Sub-score*	Linear Feet along open space/parkland (zone of disturbance)	2. Increase in impermeable surface	3. Ability to remediate storm water runoff	Average Sub-score*	1. Reciprocal Funding	e Capt	3. Long Term Maintenance	Average Sub-score*	1	Total Average Score*
Commack Road (CR 4)	Additional access roadways linking the northern portion of Heartland Industrial Park to Heartland Town Square and linking to both	CR 4-1													· ·	
	Commack Road, CR 4 and Campus Road/G Road.	CK 4-1	5	5	2	4	5	1	5	4	а	b	1	1	3	
	Prevent Heartland Property traffic from using existing CR 4, Commack Road entrance to Pilgrim State Psychiatric Center by the installation	CR 4-14	1	5	2	2	2	5	1	2			4	4	-	•
	of a card-activated access controlled gate	CK 4-14	1	3	3	3	2	,	1	3	a	В	4	"	э į	
	Intersection improvements at Grand Boulevard	CR 4-17	4	4	2	3	5	3	5	4	a	b	3	3	3	
Motor Parkway (CR 67)	Construct a new north-south driveway between Kohl's/Home Depot/Wal-Mart shopping center and Motor Parkway	CR 67-35	3	2	2	2	4	3	5	4	a	b	3	3	3	
	• New signaled intersection and access to the proposed development site east of Sagtikos Parkway, aligning with the ramp above. Drivers on Crooked Hill Road wishing to enter east of Sagtikos Parkway will use a new signalized intersection	CR 106-42	5	4	2	4	4	4	5	4	a	b	3	3	4	•
LIE South Service Road	New access point to Heartland Property off LIE South Service Road west of Crooked Hill Road	LIEServ47	5	5	2	4	3	1	5	3	a	b	3	3	3	
Long Island Avenue	• Intersection of Long Island Avenue and Executive Drive, add a separate left turn lane for the southbound approach	LIA-63	3	3	2	3	5	3	5	4	a	b	3	3	3	
Pine Aire Drive	Addition of second southbound left turn lane at Executive Drive	PAD-64	3	3	2	3	5	3	5	4	a	b	3	3	3	
	Construction of eastbound right turn lane on the approach to the southbound Sagtikos Parkway ramp	PAD-65	4	3	2	3	4	3	5	4	а	b	3	3	3	

Notes: a - Reciprocal funding not known at this time.

b - Value capture not known at this time.



Evaluation Criteria

Table 44. Congestion Mitigations, Preferred Scenario(1)

Roadway	Mitigation	Map #	Origin	Location Photographs
Commack Road (CR 4)	Add signalized access at Commack Road and Pilgrim State access/ Fish Path ⁽²⁾	CR 4-15	HTS	Yes (See Appendix)
	• Intersection improvements at Long Island Avenue ⁽³⁾	CR 4-16	HTS	Yes (See Appendix)
Crooked Hill Road (CR 13)	Re-stripe Crooked Hill Road under the LIE to provide either a second southbond lane or two northbound left turn lanes	CR 13-20	HTS/DPW	Yes (See Appendix)
	• At LIE North Service Road; add one southbond lane; reconstruct westbound approach (three lanes) (3)	CR 13-21	HTS	Yes (See Appendix)
	Widening to four thru lanes plus turn lanes between the LIE and Campus Road, CR 106	CR 13-22	HTS/ DPW	Yes (See Appendix)
	• Existing Pilgrim State intersection will be reconstructed and a traffic signal installed; eastbound approach will be expanded ⁽⁴⁾	CR 13-23	HTS	Yes (See Appendix)
	• At Community College Drive, CR 106, add second left turn lane northbound; add second left turn lane westbound; add second eastbound left turn lane; reconstruct intersection (4)	CR 13-26	HTS	Yes (See Appendix)
	CR13, Crooked Hill Road from Brook Avenue to Southern State Parkway, resurfacing and new pavement markings	CR 13-30	DPW	Yes (See Appendix)
	• Improvements to CR13, Crooked Hill Road from CR 7, Wicks Road to the vicinity of CR 106, Campus Road, resurfacing, signal reconstruction. Final alternative to be determined	CR 13-33	DPW	Yes (See Appendix)
Community College Drive (CR 106)	Intersection reconstruction at G-Road and Sagtikos Parkway exit ramp (4)	CR 106-66	DPW	Yes (See Appendix)

NOTES:

- (1) Preferred Scenario Mitigations are not listed in priority order
- (2) Not proposed for current traffic conditions
- (3) This mitigation will be constructed after 2017(4) This mitigation will be a component of the project identified by CR 13 -22

HTS = Heartland Town Square DEIS 3/09

DPW = Suffolk County Department of Public Works

CR = County Road

Map # = Mapped Congestion Mitigation Site Location Identification

2016
EXECUTIVE SUMMARY

ADDENDUM

SUFFOLK COUNTY DEPARTMENT OF ECONOMIC DEVELOPMENT & PLANNING



June 2016



Sagtikos Regional Development Area

Executive Summary and Addendum

(AKA Commack Road By-Pass Study)

Alternate Transportation Scenarios for Infrastructure Investment and Congestion Mitigation NYSDOT PIN 0760.02

Prepared by the Suffolk County Department of Economic Development & Planning in consultation and cooperation with the Suffolk County Department of Public Works

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Executive Summary Sagtikos Regional Development Area Study

Report Produced by the Suffolk County Department of Economic Development and Planning in consultation and cooperation with the Suffolk County Department of Public Works

Key findings of this Study include:

- No less than sixty-nine congestion mitigations measures on fourteen roadways have been envisioned for the study area over the past three decades.
- o There are three State, eight County and two local roadways in the study area.
- A preferred short term County scenario is presented that includes ten Suffolk County sponsored congestion mitigations on three County roadways (CR 4, CR 13 and CR 106). For this scenario an assumption is made that approvals for the proposed Heartland Town Square development would be granted in 2016.
- Further study of congestion mitigations is recommended. In coordination with Suffolk County, this further study should address the long term build-out of the core of the Sagtikos Redevelopment Area and additional mitigation solutions for roadways in the immediate and outlying areas.

Under the Transportation, Community and System Preservation (TCSP) program, part of the 2007 Safe Accountable Flexible Efficient Transportation Equity Act, Suffolk County was awarded a grant to formulate short-term and long-term congestion mitigation measures for current and proposed development in and around the "Sagtikos Regional Development Zone" and to coordinate planning for future land use decisions and transportation solutions in this area by Congressman Israel.

Situated strategically at the intersection of the Long Island Expressway and the Sagtikos Parkway, the Sagtikos Regional Development Area is an important employment center with a mix of uses. This area is considered to be one of Suffolk County's major growth and development areas because it contains some of the last major acreage in western Suffolk County available for development or redevelopment. In addition, a development project of regional significance has been proposed for the area.

Boundaries of the Sagtikos Regional Development Area Study: Northern most boundaries are Townline Road, Pulaski Road, Fort Salonga Road and Indian Head Road. Where the Townline Road Boundary meets Jericho Turnpike, the boundary extends along East Deer Park Road south to Montauk Highway. Going east on Montauk, the boundary extends to Carleton Avenue and then north along Carleton to Wheeler Road until it intersects with Nesconset Highway and Veterans Memorial Highway.

The study is being conducted by a cross-functional team that included the Suffolk County Department of Economic Development and Planning and the Suffolk County Department of Public Works.

This report includes a literature search chapter that revealed sixty-nine congestion mitigation measures envisioned for the study area spanning some three decades. The Sagtikos Regional Development Area Study includes a land use chapter that forms the basis of existing conditions and the baseline for analysis. The chapter spans land use by category, existing development patterns, environmental conditions, and motor vehicle characterizations of the study area.

Each of the congestion mitigations were evaluated according to three evaluation criteria:

- -Ability to manage growth
- -Ability to protect environmental resources, and
- -Ability to minimize budgetary impacts.

A preferred short-term County scenario is presented that includes ten Suffolk County sponsored congestion mitigations on three County Roadways Commack Road (CR 4) Crooked Hill Road (CR 13) and Community College Drive (CR 106). For this scenario an assumption is made that approvals for the proposed Heartland Town Square development would be granted. It is anticipated that Phase 1 will be developed in sub-phases with the fist sub-phase having a four year build-out. This sub-phase, 1A of Phase 1 is reported to include the following: 308,200 square feet of office space; 488,100 square feet of retail space; 85,500 square feet of civic space; and 1,225 residential units.

The proposed congestion mitigation projects for the core of the study area under Suffolk County's proposed preferred scenario adequately handles build-out of the Heartland Town Square phase 1A development pattern.

The initial study area encompassed three legislative districts. The convergence of legislative redistricting with a general expansion of study scope to mirror a New York State Department of Transportation study area has increased the number of towns and legislative districts included in the study area. The study area now includes portions of the Babylon, Huntington, Islip and Smithtown and Seven Legislative Districts.

As part of the Addendum to this study, Suffolk County prepared a pictorial visualization of the results of congestion mitigations proposed for the first phase of the development project to be potentially used as part of outreach in the future. This visualization followed an intensive interdepartmental project charrette. A description of the visualization and charrette initiative are included in this addendum.

Addendum Sagtikos Regional Development Area Study

Charrette (Held on September 3, 2016):

Suffolk County Department of Economic Development and Department of Public Works along with representatives of other Departments associated with the land development process in Suffolk County met for an intensive two day analysis of the proposed Heartland Town Square development. The purpose of the charrette (an intense period of design or planning activity) was to determine the best way to produce a visualization and infographics of the impact of congestion mitigation improvements within the Sagtikos Regional Development Area, particularly on Crooked Hill Road adjacent and to the west of the proposed Heartland Town Square development; produce a public education PowerPoint about the project and produce a summary report for public distribution. The visualization may be used to advance public understanding of the project in conjunction with NYS DOT public information meetings with respect to the State Funded NYS DOT Sagtikos State Parkway Corridor Study.

An overview of the existing conditions in the Sagtikos Regional Development Area, proposed future and in process development and traffic conditions were re-examined. In addition, similarly sized projects (to Heartland Town Square) were sought out to compare and compile best practices for roadway improvements. A visual site inspection tour of the Heartland Town Square development site and the area roadways in the Sagtikos Regional Development Area was undertaken to observe congestion mitigation sites as a development team and discuss issues and opportunities. The visualization and additional maps deemed helpful for public discourse are presented at the end of this addendum. A synopsis of the data presented and discussed during the bus tour and charrette is as follow:

Existing Conditions

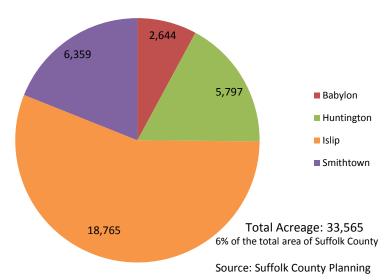
Heartland Town Square is by far the largest development proposal in the study area. It is located on land which was formerly a portion of the Pilgrim State psychiatric facility. A portion of the original Pilgrim State Hospital that is owned and controlled by the New York State Office of Mental Health (OMH) remains in operation on approximately 200 acres. The Heartland Town Square development is proposed to be constructed on 452 acres surrounding Pilgrim State Hospital on three sides. See Attachment A-1 for the Existing Conditions Power Point presentation that was given at the Charrette.

Demographic Conditions

Study Area Acreage

The study area includes 33,565 acres (52.4 square miles) and contains nearly 65,000 separate land parcels. The study area comprises 5.7% of the total area of Suffolk County. The Town of Islip contains the majority of the land in the study area, more than 18,000 acres. Smithtown is next with more than 6,000 acres, followed by Huntington with more than 5,000 acres, and then Babylon with 2,600 acres. See Attachment A-2 for the Demographic Power Point presentation that was given at the Charrette.

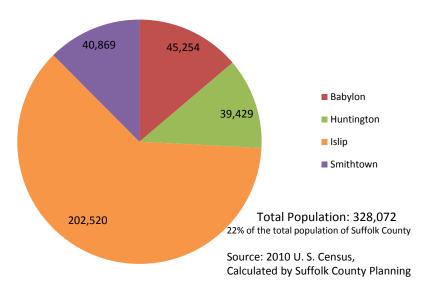
Acreage, by Town
Sagtikos Regional Development Area



Population

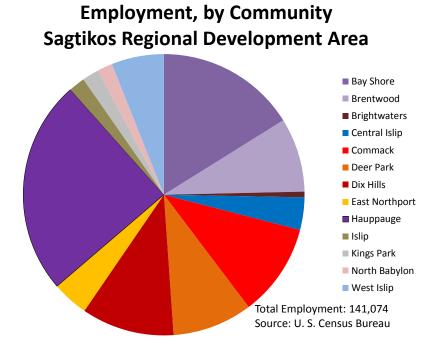
The study area has a substantial population. The fourteen Census Designated Places (local communities) that comprise the study area contained more than 328,000 residents in 2010, representing 22% of the entire Suffolk County population. The largest population in the study area was found in Islip Town (202,000), including the community of Brentwood (which had 60,000 residents in 2010). Brentwood alone accounts for 18% of the entire population in the study area.

Population, by Town, 2010
Sagtikos Regional Development Area



Employment

In 2010, there were 141,074 persons employed at businesses in the thirteen zip codes that contain the Sagtikos Regional Development Area. This figure represents 27% of all employment in businesses in Suffolk County. By far the largest employment center in the study area is located in Hauppauge, where 35,000 people work in business establishments, followed by Bay Shore with nearly 23,000 employees. In comparison, Melville and Farmingdale (known as the Route 110 Corridor) to the west of the study together contain nearly 78,000 private sector payroll employees.



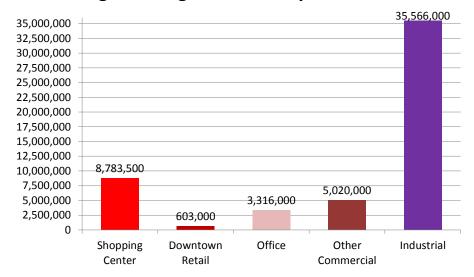
Commercial and Industrial Development

The Sagtikos Regional Development Area contains 8,783,500 square feet of shopping center space in 142 shopping centers and large retailers. The square footage of shopping centers in the study area represents 22% of all the shopping center square footage in Suffolk County. The study area includes portions of twelve downtown centers, totaling 603,000 square feet of ground floor space.

The Sagtikos Regional Development Area also contains numerous major office buildings. The total square footage of the seventy major office buildings in the study area is 3,316,000 square feet. Significant other commercial development exists within the study area. Examples of this type of development in the study area include hotels, gasoline stations, vehicle repair shops, public storage facilities, and freestanding commercial buildings. These commercial buildings total 5,020,000 square feet in the study area.

Finally, there is significant industrial space in the study area, including the entire Hauppauge Industrial Park. This large industrial area in the Town of Smithtown contains 13,100,000 square feet of industrial space and is an employment center for more than 30,000 workers, which represents about 6% of the total employment in the County. The study area contains 35,566,000 square feet of industrial space, approximately 35% of all industrial square footage in Suffolk County.

Square Footage of Selected Development, Sagtikos Regional Development Area



Source: Suffolk County Planning

Historic Population of Pilgrim Psychiatric Center

Pilgrim Psychiatric Center opened in 1931, with 100 patients. By 1954, its population peaked in 1954 at more than 13,000. With the arrival of medical alternatives to institutionalizing patients, Pilgrim's population steadily declined and many buildings were closed in the 1970s and 1980s. The farming section of the hospital grounds was sold off and became the Western Campus of Suffolk Community College in 1974. In the early 1990s, with declining patient populations in Long Island's State hospitals, the New York State Office of Mental Health began to reorganize the Long Island hospitals. In 1996 the Kings Park and Central Islip state hospitals were formally closed and the remaining patients from those facilities were transferred to Pilgrim, the last of the State asylums still operating on Long Island.

Year	Pilgrim Hospital Population
1932*	2,018
1954*	13,875
1960**	12,112
1970**	8,199
1980**	3,865
1990**	2,278

1,078

489

*Source: NYS Office of Mental Health
**Source: LIPA Population Survey

2000**

2010***

***Source: U. S. Census Bureau - 2010 U. S. Census

Proposed Development

The Heartland Town Square development proposal is the largest proposed development in the study area. Heartland Town Square contains a total of 14.4 million square feet of development in three phases. This proposed development represents 75% of the total square footage proposed in the proposed development projects in the study area. The Heartland Town Square project is still under review and has not been approved, and none of the proposed traffic mitigations solely related to this project have been implemented by the project sponsor.

Phase 1A of the Heartland project assumes a four year build-out of 308,200 square feet of office space, 488,100 square feet of retail space, 85,500 square feet of civic space, and 1,225 residential units. Ultimately, with a 20 year buildout, the development is proposed to contain 9,130 residential units, 4,150,000 square feet of office space, and 1,030,000 square feet of retail and other commercial space.

Suffolk County Planning Commission Referral Process

The Suffolk County Planning Commission would have jurisdiction over the proposed Heartland Town Square development. The change of zone for the proposed Heartland Town Square development will need to be referred by the local municipality (Town of Islip) to the Suffolk County Planning Commission, because the development lies within 500 feet of a municipal boundary, and within 500 feet of State and County owned land, and within 500 feet of State and County roadways. The Commission may disapprove the change of zone, approve it with conditions, approve it with comments, or take no action. If then the development is approved by the Town of Islip, the development site plan would need to be referred to the Suffolk County Planning Commission as well.

The Town of Islip regulatory review and approval process was reviewed. The Town and County review processes work concurrently on multiple levels through various local steps in the review process (see Town and County regulatory review flow charts, attached).

A neighboring municipality may object to the Town of Islip's approval of the change of zone. In this case, the ultimate decision to approve or disapprove the proposed action rests with the Suffolk County Planning Commission, for the area within 500 feet of the municipal boundary. See Attachment A-3 for the Suffolk County Planning Commission Referral Process Power Point presentation that was given at the Charrette.

Economic Impact

In total, throughout the construction period and annually when office space and retail space is 85% occupied, Phase 1A of the Heartland Town Square development is estimated to result in direct spending of \$465,856,725. The total indirect economic impact (including direct and indirect spending, or the "multiplier" effect), is estimated to be a \$1.4 billion increase in total economic output, a \$342.7 million increase in earnings, and an increase of 15,405 jobs.

Proposed Traffic Mitigations

There are numerous County-owned and maintained highways within the study area with varying classifications and lane configurations. The Suffolk County Department of Public Works detailed several scheduled traffic mitigations within the core of the study area. Some of the road improvements directly related to proposed Heartland Town Square remain to be determined.

Proposed BRT

The Suffolk County Bus Rapid Feasibility Study identified a significant potential BRT route within the study area: *Babylon to Kings Park via the Sagtikos Parkway*. The Suffolk County Feasibility Study concluded that most of the existing traffic congestion along this corridor is concentrated on the Sagtikos/Sunken Meadow Parkway between Crooked Hill Road and Pulaski Road, as well

as in the vicinity of the Deer Park LIRR station. Future traffic conditions are estimated to worsen, which indicates that the corridor could benefit from implementation of BRT improvements.

The major components of the study area's transportation network (the Long Island Expressway, Northern State Parkway, Sunrise Highway, Southern State Parkway, and the LIRR) are laid out in the east-west direction. The proposed BRT route, between Babylon and Kings Park via the Sagtikos Parkway, aligns with the Connect Long Island objective of creating a north-south mass transit corridor. This route bisects the entire study area and is expected to make stops at Heartland Town Square and the Deer Park Railroad Station. The exact location of these BRT stations remains to be determined.

Additional Maps

During the Charrette process it was found to be beneficial to have two additional maps added to the existing conditions inventory. A map demonstrating the Suffolk County School Districts (to assist in economic analysis) and a Map depicting Inter-State, State and County Roads by differing color were added to the existing conditions section for clarity of jurisdiction. See Attachments B and C for the Suffolk County School District Map and the Inter-State, State and County Road Map.

There are fourteen school districts in the study area (see map), one interstate (NYS Rte. 495), five state Parkways (Sunken Meadow, Northern, Sagtikos, Southern, as well as, Robert Moses Causeway), five additional State Roadways (Rte. 25, 27, 27A, 231 and 454) and fourteen County Roads (CR 4, 6, 7, 13, 13A, 14, 17, 50, 57, 66, 67, 82, 100 & 106).

SketchUP/ Power Point

SketchUP and Power Point software were utilized to study mitigations proposed in the DEIS for the Heartland Town Square project under the jurisdiction of Suffolk County. Multiple test cases for comparative and demonstration options were reviewed for the best approach toward visualization for public outreach. See Attachment A-4 for the SketchUp/Power Point presentation that was given at the Charrette.

Analysis

Visualization techniques reviewed and discussed resulted in pictorials of the congestion mitigations proposed to alleviate obstructed motor vehicle travel. Data derived from the Heartland Town Square traffic sections of the Environmental Impact Statement were utilized for source information for the visualizations. Quantitative delays in movement appeared to be decreased only slightly at CR 4 and Fish Path by proposed congestion mitigations and qualitative improvements (better lighting, Line of site, view sheds, etc.) were problematic to represent. Some improvements were noted on other area roadways (see attached). It was also observed that any benefit on congestion mitigation on the studied intersections derived from

proposed Suffolk County Bus Rapid Transit (BRT) service routs to the Heartland town square development was not included. See Attachment A-5 for the Visualization Power Point presentation that was given at the Charrette and then updated in future work sessions.

Site Visits to Other Large Scale Mixed Use Projects:

Steelpointe Site Visit

On December 29, 2015 staff of the Suffolk County Department of Economic Development and Planning (SC DEDP) met with the staff of the City of Bridgeport Office of Planning and Economic Development regarding a development project known as Steelpointe. This project is comparable to Phase 1A of the Heartland Town Square project, the nucleus of the Sagtikos Regional Development Area Study.

The purpose of the meeting was to provide an opportunity to learn about the planning issues related to this large scale mixed use project with particular attention to congestion mitigation and how lessons learned may be applied to Heartland. The meeting consisted of an in-house presentation followed by questions, answers and discussion. In addition, the project team and their hosts conducted a walking tour of the development site.

David Kooris, Director of Planning and Economic Development of the City of Bridgeport, Connecticut and Steve Yyliszcak, Development Administrator for the Steelpointe project lead the tour. The site was a short walking distance from the Bridgeport ferry terminal (See Aerial Photograph # 1).



Aerial Photograph # 1 – above is a Google Maps aerial photograph of the Steelpointe Project and surrounding area. The approximate location of the Steelpointe Project is outlined in red.

The Steelpoint project is a three-phase plan that includes nearly 2 million square feet of mixed-use space. When completed, Steelpointe is slated to include approximately 750,000 SF of retail, dining and entertainment, 30,000 SF of Class A office, two hotels with 300 rooms between them and a sizable residential component; 1,100 mid-rise and high-rise multifamily units. The Steelpointe master plan also includes a 12 screen premium movie theater with stadium seating and an in-house dining facility. In addition to the gross floor area similarities, the Steelpointe project also shares in common with Heartland, the "capture" dynamics of walkability (to the train) and its potential impact on reducing automobile trips, particularly single occupancy vehicles.

The development area for the Steelpoint Project was most recently home to a power plant, marinas, shellfish businesses and about 270 houses. Most of the neighborhood, depressed and in disrepair, disappeared in a wave of eminent-domain acquisition the city began in the 1990's. All that remains is one shellfish company that was moved to another part of Steel Point (See Photograph # 2).



Photograph # 2 – above is a photograph of the Steelpointe project site and surrounding area.

Access to Steelpointe is from two exits off of I-95, which runs along its northern border, to Connecticut Route 130 (CTRT 130); the main boulevard of the development proposal. Exit 28 and 29 off of I-95 were anticipated to have similar characteristics as the I-495 intersections with the Heartland Town Square project area roadways of Commack Road (CR-4) at exit 52 and Wicks Road (CR-7) at exit 54.

At the time of the site visit construction was underway for phase 1 of the project that includes Starbucks, Chipotle and a 150,000 square foot Bass Pro Shops (See Photograph #3). Bass Pro Shops will operate its own private marina in later phases. Unique about the Steelpointe Harbor project is its water front location and a proposal for a 200-slip deep water marina, cross sound ferry terminal (later phases) and a wide pedestrian harbor front promenade.



Photograph # 3 – above is a photograph of the 150,000 square Feet Bass Pro Shops retail building.

It could be argued that the Steelpoint project was decades in the making; weathering several city administrations, economic recessions and public opposition. The City however, was able to leverage municipal capital to secure a TIGER (Transportation Investment Generating Economic Recovery) grant to reconstruct CTRT 130, the main thru-road of the proposed Steelpointe project. In all, public investment directed to facilitate this project totals close to \$190 million. Reconstructing roads, burying utility lines, providing for street amenities such as building new sidewalks, lighting and street furniture, re-bulkheading the shoreline, a commitment to providing for municipal structured parking, in addition to countless hours of municipal staff time, has been the public stimulus to bring phase 1 to fruition.

The Hartland Town Square project is located on 452 acres of the former Pilgrim State Psychiatric Center in the Town of Islip at the confluence of a major interstate highway and parkway facility. This project has required an extensive evaluation to ensure that the proposed residential, commercial office and retail components can integrate with the external roadways in the area. At full build-out the project is envisioned to include 9,000 residential units, 1 million SF of retail space and 3.2 million SF of office space.

Among the topics covered at the meeting with the City of Bridgeport Office of Planning and Economic Development was trip generation methods-including internal capture, analysis of phased build-out of the project and a monitoring approach during project buildout to ensure that predicted trip levels are not exceeded and congestion mitigations put in place are working.

Upon discussion with Bridgeport planners It was determined that the trip generation characteristics of the two exits off of I-95 to Connecticut Route 130 (CT RT 130) and Connecticut Route 127 (CT RT 127) were not similar to the characteristics of Suffolk County's Commack Road (CR-4) at exit 52 and Wicks Road (CR-7) at exit 54 off of the Long Island Expressway (LIE). Both of the Suffolk County roads were characterized as having higher daily traffic flows and greater congestion at the peak hours. While I-95 in Connecticut, at the area of the Steelpointe project location, has significant congestion during the peak hours, the congestion does not significantly flow off of I-95 to CR RT 127 and CT RT 130. This is likely due to the fact that CT RT 127 and 130 are more local in nature and do not serve as a viable alternate regional thoroughfares. (See Photograph # 3) This is dissimilar to the Long Island project.

The meeting also included a discussion of the planned move of Port Jefferson/Bridgeport Ferry Terminal in Bridgeport. This move will result in the Bridgeport Ferry terminal being moved east, away from downtown Bridgeport and closer to I-95. This is anticipated to result in easier vehicle access to I-95 and reduce traffic congestion in downtown Bridgeport. This move will also allow for additional development in downtown Bridgeport including but not limited to the Steelpointe project. As with the Steelpointe project in Bridgeport, adjustments to the transportation infrastructure in and around the Sagtikos Study area will likely play an important role in the Heartland Town Square Project. As discussed in the main portion of this Study, Suffolk County is exploring adding a Bus Rapid Transit Route which would connect the Heartland Town Square project to nearby train stations and regional attractions. Like in Bridgeport this adjustment to the transportation infrastructure has the potential to reduce congestion in the Study area and enable additional development.

The Connecticut DOT took a dismal view of capture rate multipliers for alternative modes of transportation that could reasonably bring foot traffic in-lieu-of motor vehicle trips to and from the Steelpoint project site. Preferring to use standard trip generation multipliers and giving no credit to the potential of alternative modes of transportation, Connecticut Department of Transportation, at the time of its review of the Steelpointe proposal, determined not to consider any capture potential of the nearby train station and ferry terminal. Thus, CTDOT backed into the impacts to the two I-95 intersections and determined at what density the proposed project could be built out at and not require mitigation to the intersections. CTDOT would not issue any construction permit to the intersections of I-95, in essence, CTDOT capped project density based on standard multipliers and the trip volume anticipated on the intersections. It was discussed that during the phased buildout process the Connecticut DOT may evaluate the project trip generation data and determine whether additional project development can be accommodated by the road network.

While the General Development Plan for Steelpointe does not include a parking stall reduction credit for the proximity to the city or proximity to the ferry/train terminal, a parking demand management program or a parking stall demand reduction schedule, it is intended that the final controlling zoning code and site plan developed for the Steelpointe Harbor residential and office component will include modernized parking stall schedules and incentives for parking stall demand reduction. As the project evolves, SC DEDP staff will periodically update our research efforts to gain information on the congestion mitigation efforts and results from this project and document any "lessons learned" from the City of Bridgeport Office of Planning and Economic Development that might be applicable to the Sagtikos Regional Development Area Study.

Nassau Hub Site Visit

On March 7, 2016 staff of the Suffolk County Division of Planning and Environment met with staff of the Nassau County Department of Public Works to review congestion management initiatives associated with the development of the Nassau Hub and surrounding area. Information, methodology and lessons learned regarding motor vehicle congestion management from the development of the Hub project was the goal of the Hub tour.

The Hub project is divided into a Primary Area and a Regional Area. The Primary Area was established as the geographic focus of the Hub and is where the majority of physical improvements associated with any given alternative for redevelopment are anticipated to occur. The Nassau Hub Primary Area occupies an approximate 11.7 square mile area in the heart of Nassau County and is home to Hofstra University (existing campus and planned medical school), Nassau Community College, Museum Row, the Nassau Veterans Memorial Coliseum, the County Government Center, Nassau University Medical Center, Mitchel Field, Eisenhower Park, Roosevelt Field and other notable Nassau County features. Thousands of residents, employees and students live and work in the area. Believed to be a crucial economic center, the Hub area has substantial traffic congestion, lacks efficient and direct transit choices and has varied land use patterns. These factors have contributed to long commutes, decreased environmental quality and overall difficulty in traveling to, from and within the area.

The Nassau Hub Regional Area was defined based on travel patterns, potential opportunities for connections between activity centers and key economic development opportunities outside the defined Primary Area. The Regional Area was designed to be consistent with the New York Metropolitan Transportation Council's (NYMTC) 2014-2040 Regional Transportation Plan (see Nassau Hub study area map).

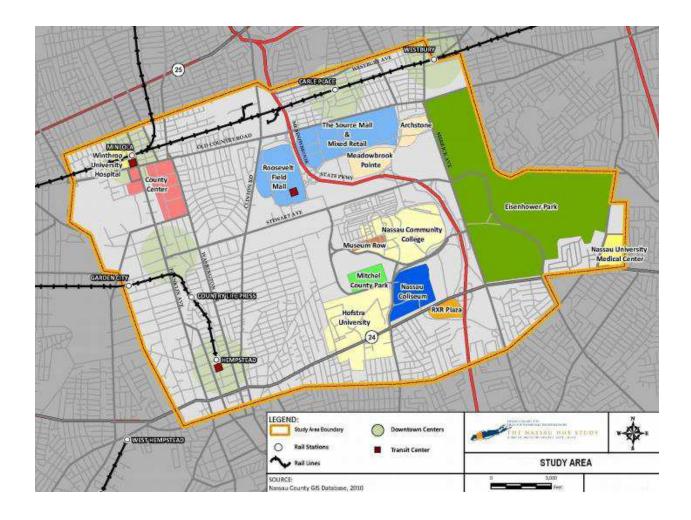


Figure # 1 - above is a map of the Nassau Hub Study Area. This map is from the Nassau Hub Alternative Analysis Report.

Tour Summary

Below is a summary of the key locations in the Nassau Hub Study Area that were visited and discussed on the March 7, 2016 tour:

Downtown Hempstead

The tour of the Nassau Hub Project began at the Rosa Parks Hempstead Transit Center (RPHTC) (See Figure # 2 + 3). The RPHTC is a Nassau Inter County Express (NICE) bus terminal and is adjacent to the Hempstead Long Island Rail Road (LIRR) terminal. It was discussed that the RPHTC is a highly active transit node whereas the LIRR Terminal is less active. The area surrounding the RPHTC includes high density residential and commercial uses. The proposed Nassau Hub Study Area BRT route includes a transit stop at the RPHTC.



Figure # 2- above is a photograph of the LIRR Train Station in Downtown Hempstead.



Figure # 3- above is a photograph from the Rosa Parks Hempstead Transit Center.

Hofstra University

Hofstra University is approximately two miles east of downtown Hempstead. The campus is located on the northern and southern sides of Hempstead Turnpike. The proposed BRT route will run down Hempstead Turnpike and connect downtown Hempstead to Hofstra University. This portion of Hempstead Turnpike is urban in nature and includes residential and commercial uses. There is limited right of way space in this portion of the right of way due to a building pattern that has placed most structures close to the roadway. This limits the possibility of establishing a dedicated BRT right of way lane in this area. The anticipated expansion of Hofstra University was discussed as well as possible additional development on a number of vacant parcels in the area. The presence of Hofstra University combined with the additional anticipated developed highlighted the importance of including this area on the BRT route.

Nassau Coliseum

The Coliseum is located approximately one-tenth of a mile east of Hofstra University (See Figure # 3). This stretch of land is unique to the study area because housing is primarily single-family homes or university owned. The BRT line will not run through Nassau Coliseum but will be located one block west of the Coliseum on Earle Ovington Boulevard. The surface parking lots will eventually be converted to various development uses and structured parking will become the primary parking type.



Figure #3- above is a photograph from the Rosa Parks Hempstead Transit Center.

Nassau Community College

The tour continued to Nassau Community College (NCC) which is located approximately one mile from the proposed BRT Stop at Nassau Coliseum. It was discussed that a NCC study reported 10% of NCC students regularly use NICE to access the campus and the proposed BRT will provide the NCC students with an important additional linkage to Nassau's transportation infrastructure.

Roosevelt Field Mall

Two miles from NCC is the Roosevelt Field Mall BRT Stop. This location already includes a high volume NICE transfer station which is used by workers and shoppers. The BRT line will only access the South Entrance of the Roosevelt Field Mall. It is anticipated that the BRT stop at the Roosevelt Field Mall will be an important resource for the large number of workers and shoppers who travel to the Mall and do not use/have access to automobiles.

Mineola Intermodal Center/LIRR

The Mineola Intermodal Center/LIRR station was the final stop of the BRT portion of the Nassau Hub tour. It was discussed that BRT will provide an important transportation link to the workers of Winthrop Hospital, the Nassau County court and government buildings as well as the downtown residents. It was also discussed that the BRT stop at this location may help foster downtown development by potentially reducing the amount of parking that is needed. It was also noted that this Downtown development will have very good access to NYC via the LIRR.

Merrick Road

After visiting downtown Mineola the tour continued down Jericho Turnpike (SR 25) to Merrick Road. Merrick Road was shown in The Nassau Hub Alternative Analysis Report to have some of the lowest intersection service levels in the Nassau Hub Study Area. In addition Merrick Road is a Minor Arterial Roadway that runs in a north/south direction just to the east of the core of the Nassau County Hub development. It was discussed on the tour that the traffic mitigations planned for Merrick Road are adjustments to traffic signalization and manual traffic controls before and after events at the Nassau Coliseum. There are not structural traffic mitigations planned for Merrick Road.

Lessons Learned

The tour of the Nassau Hub provided some important "lessons learned" for the Sagtikos Regional Development Study. Like the Sagtikos Regional Development Study which has a regional study area and a smaller core study area the Nassau Hub Study included a large regional study area and a primary study area around the Nassau Coliseum.

Below Table 1 provides a comparison of the development potential of the Nassau Hub Study Area and the Heartland Town Square project.

	Current Proposed Development in the Nassau Hub Study Area	Maximum Potential As of Right Development/ Redevelopment in the Nassau Hub Study Area	Phase IA of Heartland Town Square	Heartland Town Square Project
Residential	3,855 units	15,765 units	1,225 units	9,000 units
Retail	803,600 SF	2,464,350 SF	488,100 SF	1,000,000 SF
Office	492,100 SF	7,376,600 SF	308,200 SF	3,239,500 SF

Table # 1- proposed development for the Nassau Hub Study Area and the Heartland Town Square Project. Data is from the Nassau Hub Alternative Analysis Report and the Sagtikos Regional Development Study.

The Nassau Hub Alternative Analysis Report focuses on the development of a BRT route through the study area. This Nassau Hub Study analyzes in detail how a BRT route can connect key uses such as the Nassau Coliseum and Nassau Community College to transportation hubs such as the Rosa Parks Hempstead Transit Center and the Mineola Train Station. Compared to the Sagtikos Study there is less discussion on traffic mitigations for roadways and road intersections.

The Sagtikos Study also discusses a potential BRT route through its study area but in less detail than the Nassau Hub Study does. As a result the Nassau Hub Study will be an important reference as work continues on the planning of the BRT route through the Sagtikos Study Area. The Nassau Hub Study will be an important resource on feasible ways for a BRT route to connect transit nodes to key residential, recreation and commercial nodes. In addition, the Nassau Hub study will provide insight into the ability of BRT to reduce traffic congestion in a defined study area.

As the Nassau Hub project evolves, SC DEDP staff will periodically update our research efforts to gain information on the congestion mitigation efforts and results from this project and document any "lessons learned" from the Nassau County Department of Public Works that might be applicable to the Sagtikos Regional Development Area Study.

In 2014, Suffolk County completed its BRT Feasibility Study, which screened 35 potential transit corridors and identified three priority corridors wherein BRT could be implemented – Nicolls Road, Route 110, and Sagtikos Parkway. The introduction of BRT to these three corridors would provide the first direct north-south transit links in the County, connecting the established branches of the LIRR, which operate east-west.

Sagtikos Regional Development Area Executive Summary and Addendum

Attachment A-1 - Charrette's Existing Conditions Power Point

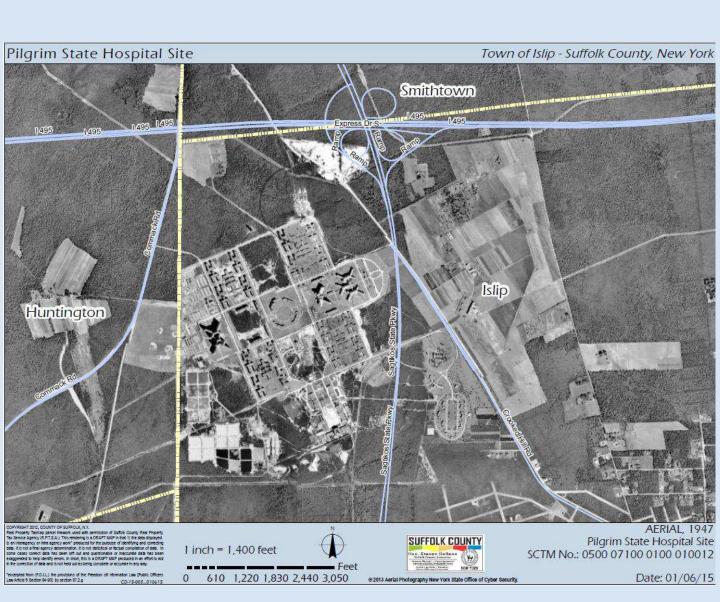
SAGTIKOS REGIONAL DEVELOPMENT AREA STUDY DESIGN CHARETTE



Suffolk County Department of Economic Development and Planning

September 3, 2015

1947 Aerial

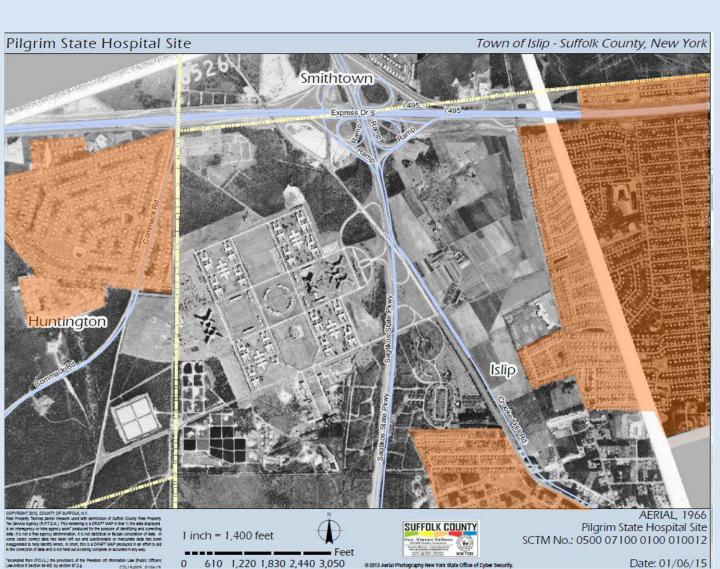


Pilgram State Hospital –Early History

- Pilgrim State opened in 1931 on 825 acres.
- By 1954 the facility housed more than 13,000 psychiatric patients in what was at the time the largest hospital of any type in the world.
 - The hospital had its own police and fire department, courts, post office, power plant, cemetery, water tower, and houses for doctors, psychiatrists, and asylum administrators.
 - A rail spur off the Long Island Railroad main line was constructed to the property with its own passenger station at Pilgrim. Service to this station ended in 1978.



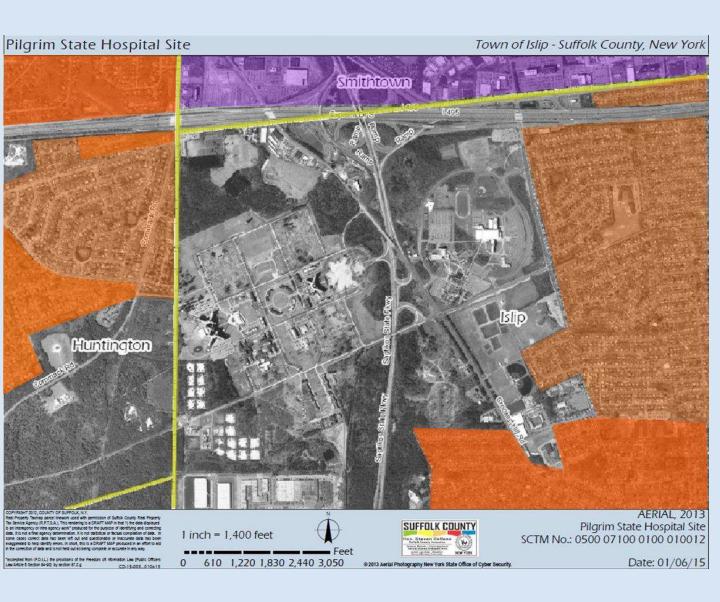
1966 Aerial

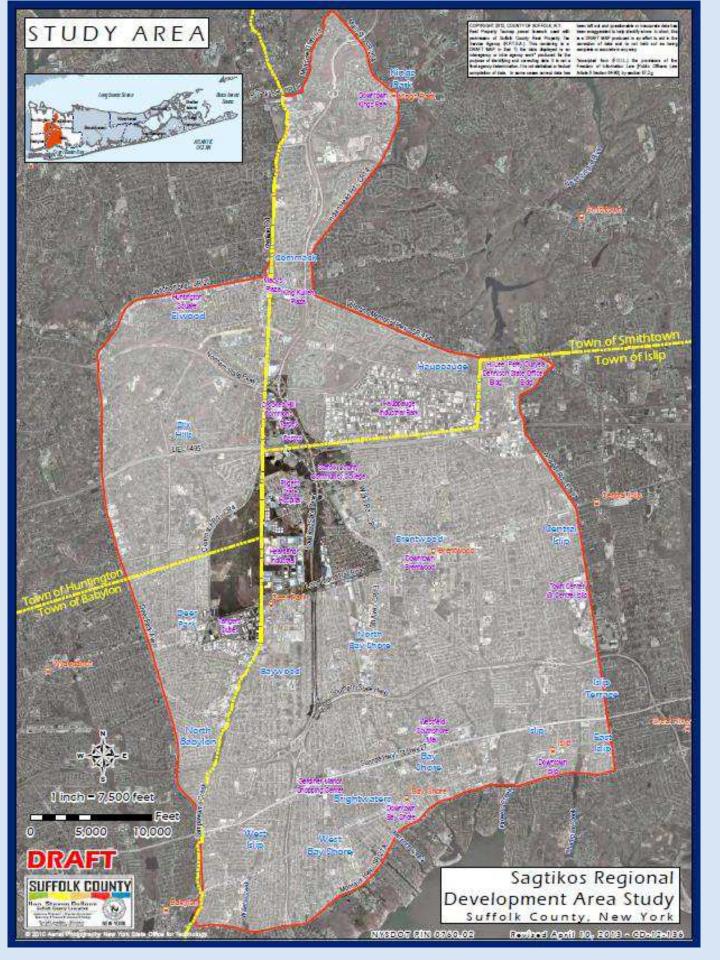


Pilgram State Hospital – Recent History

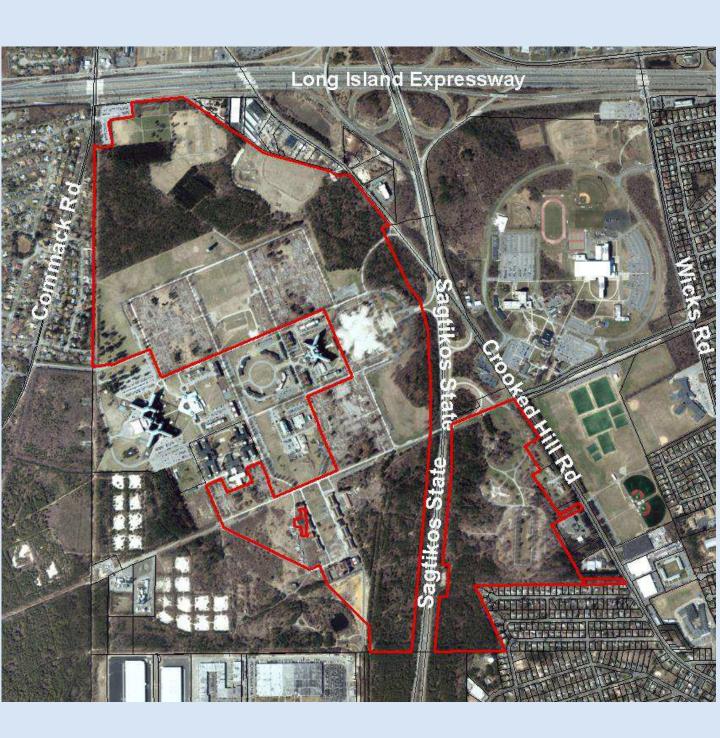
- With the arrival of medical alternatives to institutionalizing patients, Pilgrim's population steadily declined and many buildings were closed in the 1970s and 1980s.
- The farming section of the hospital grounds was sold off and became the Western Campus of Suffolk Community College in 1974.
- In 2002, a 452 acre portion of the Pilgrim State Hospital property was sold to a developer. Since that time, many buildings on the site have been demolished and cleared.
- The core of the Pilgrim State Hospital campus remains intact, housing about 650 patients.

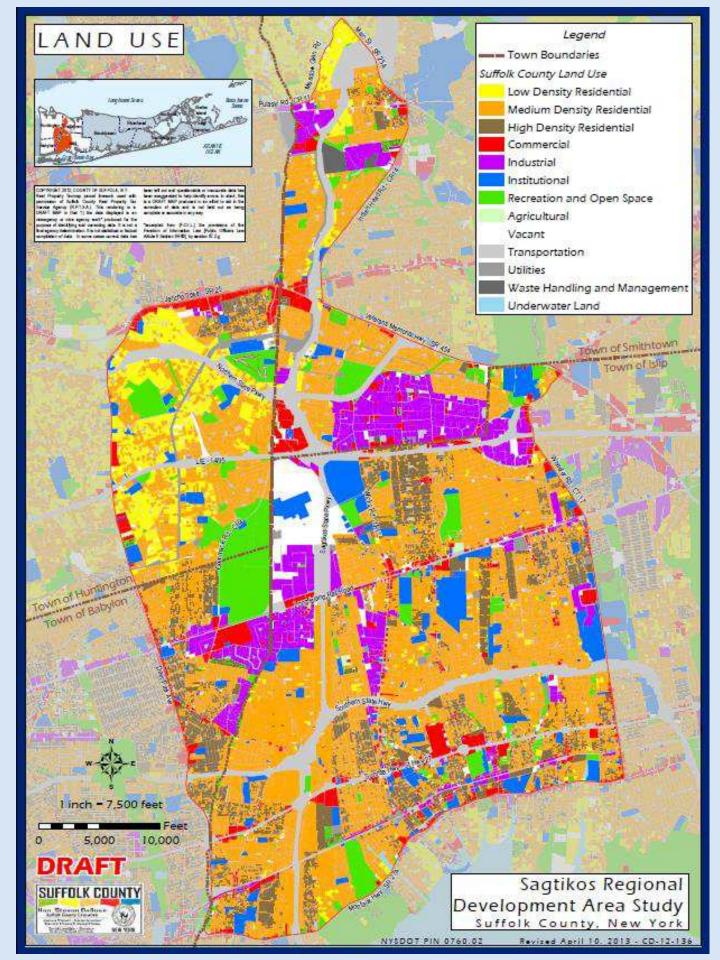
2013 Aerial

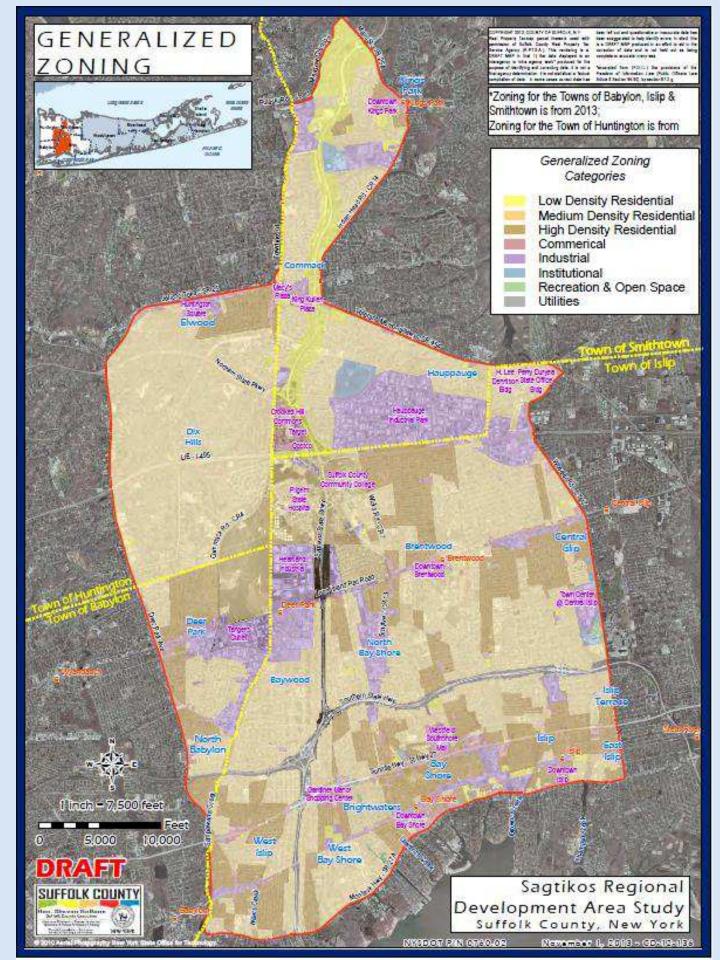




Aerial of Proposed Heartland Town Square Subject Property

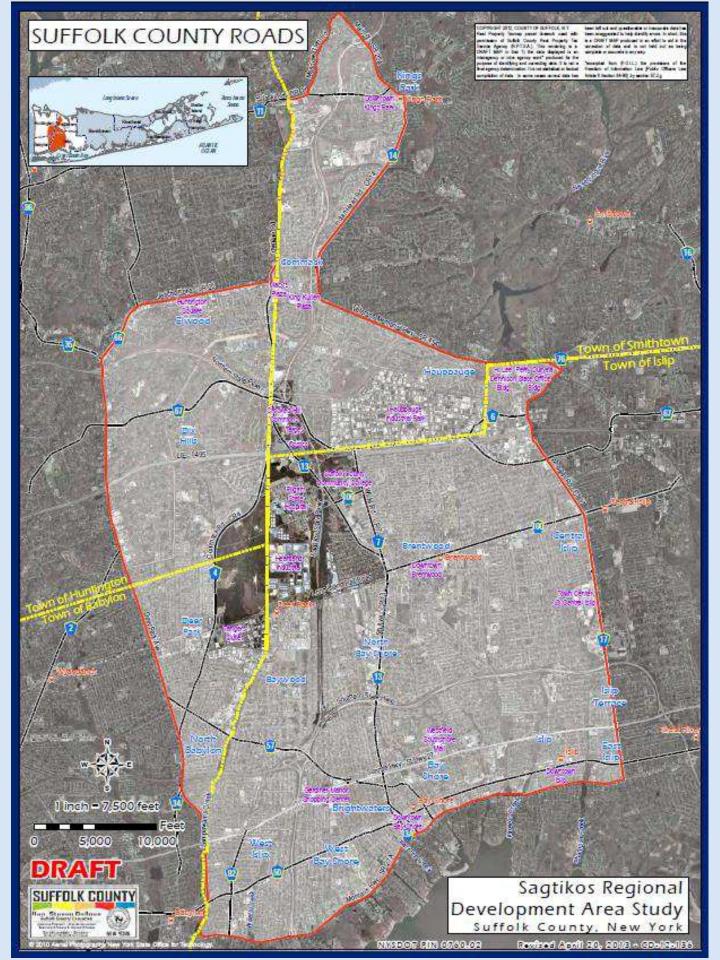


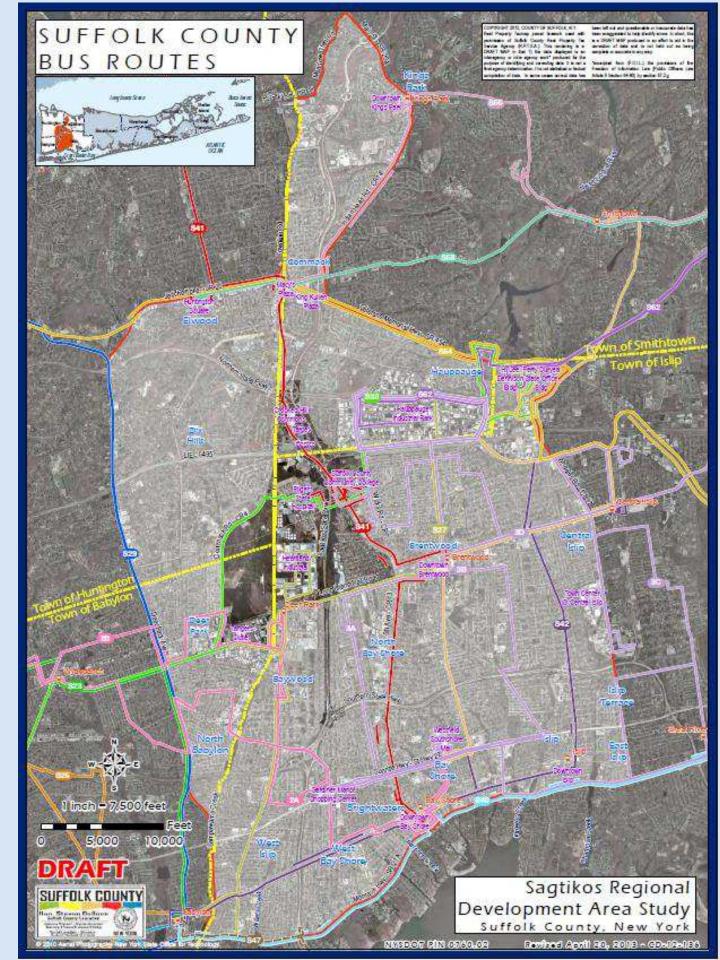




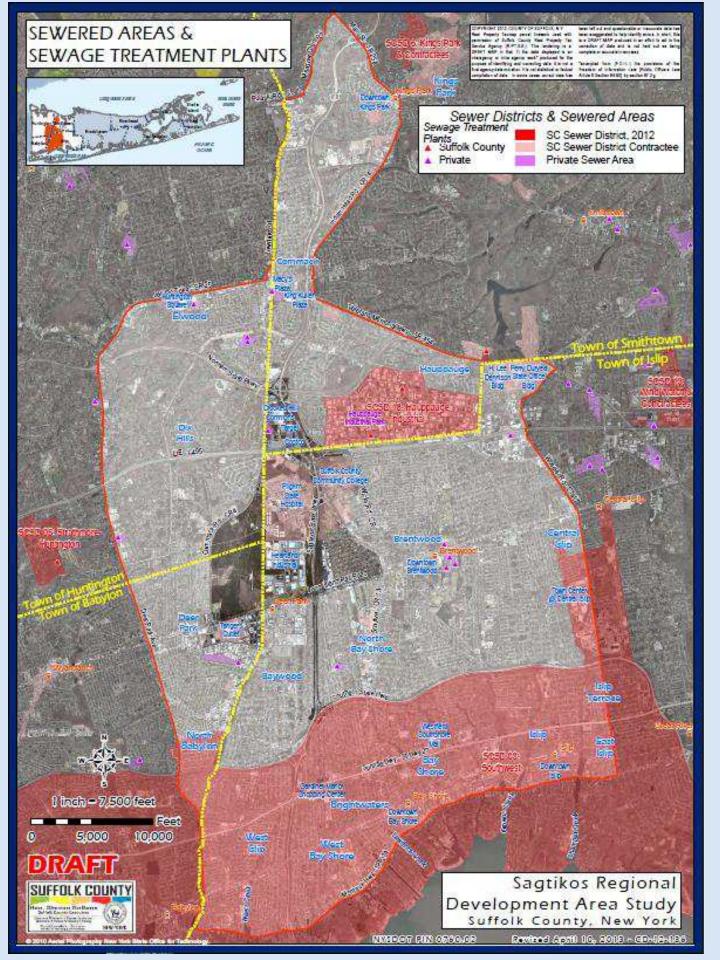
Current Zoning of Proposed Heartland Town Square Subject Property

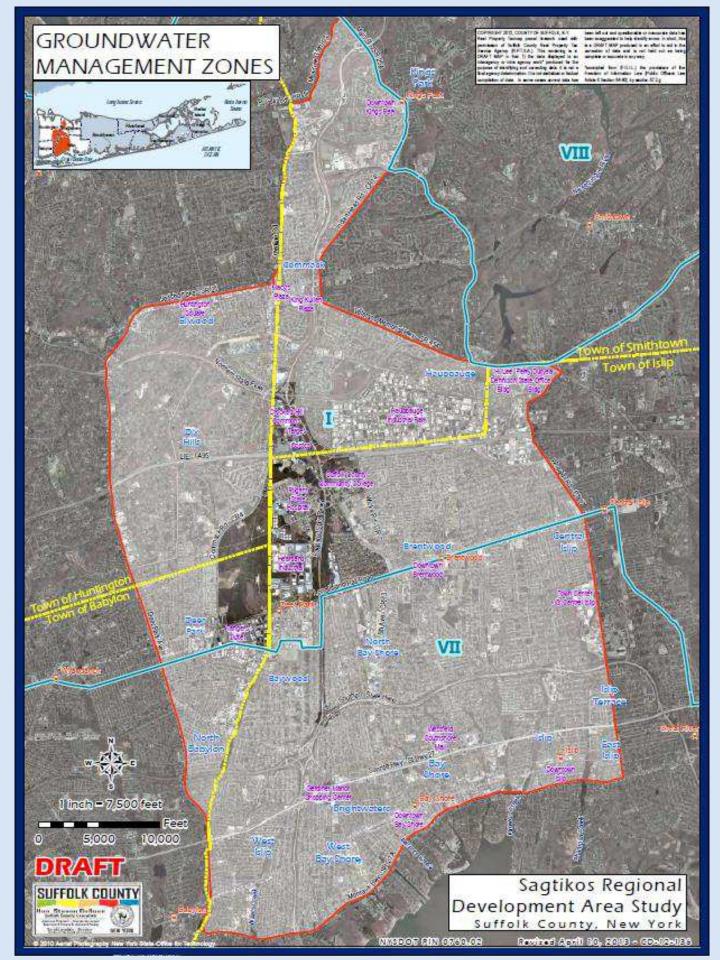


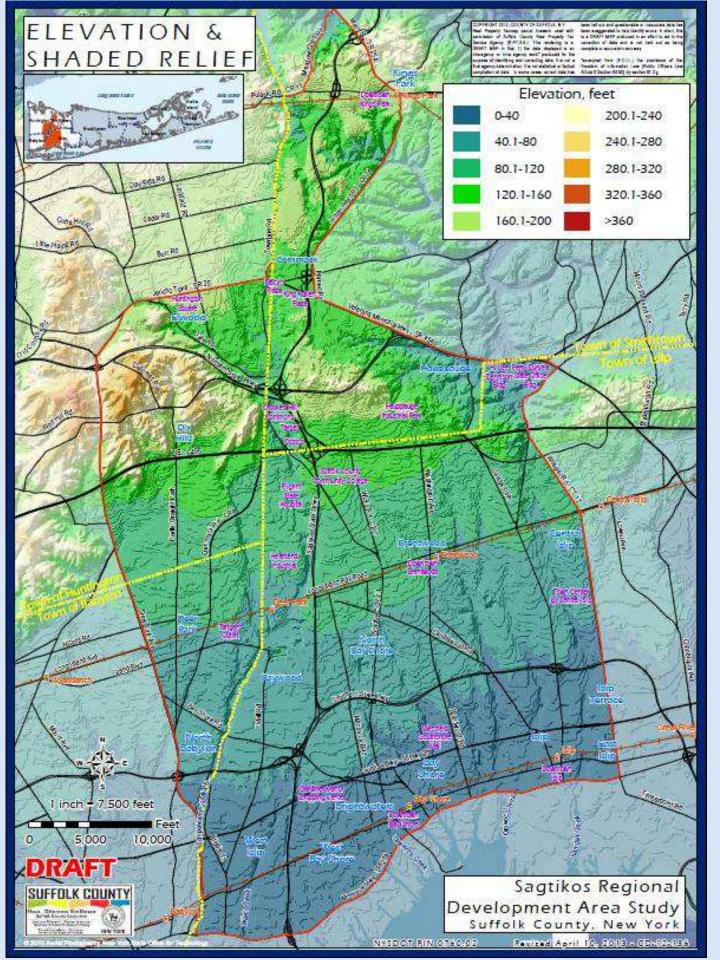


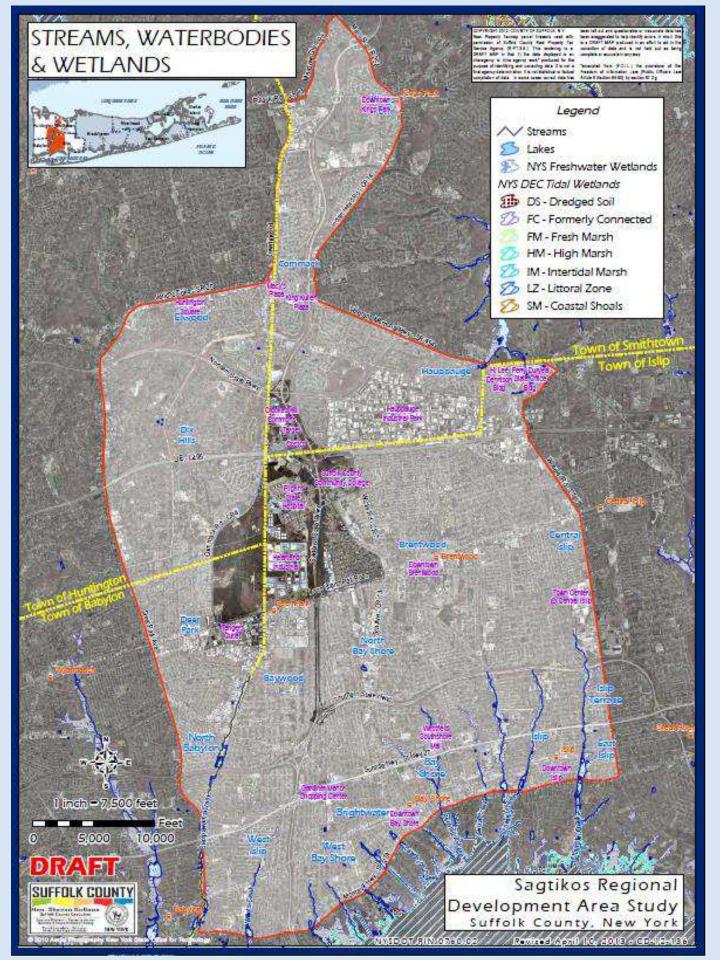










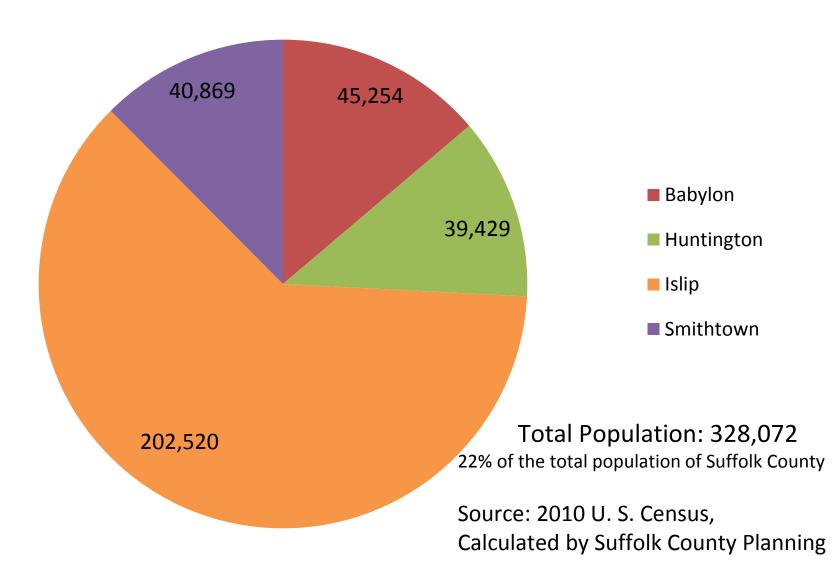


Thank You

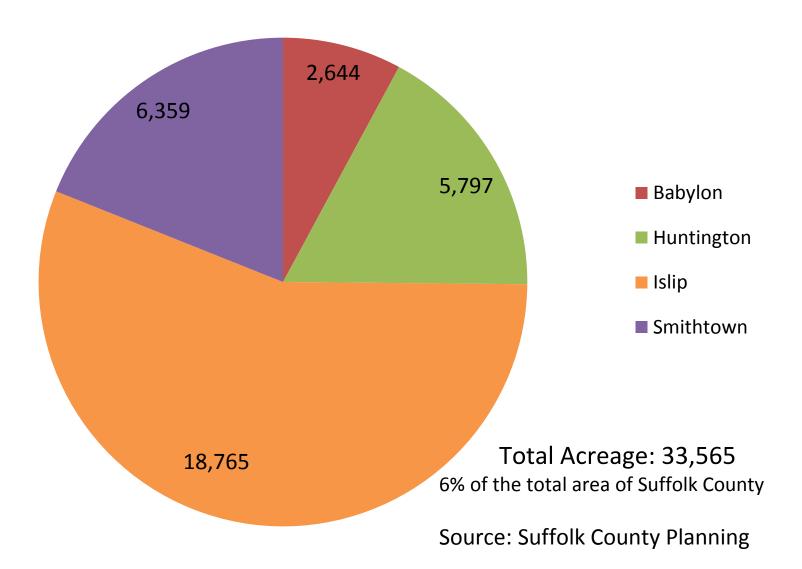
Sagtikos Regional Development Area Executive Summary and Addendum

Attachment A-2 - Charrette's Demographic Conditions Power Point

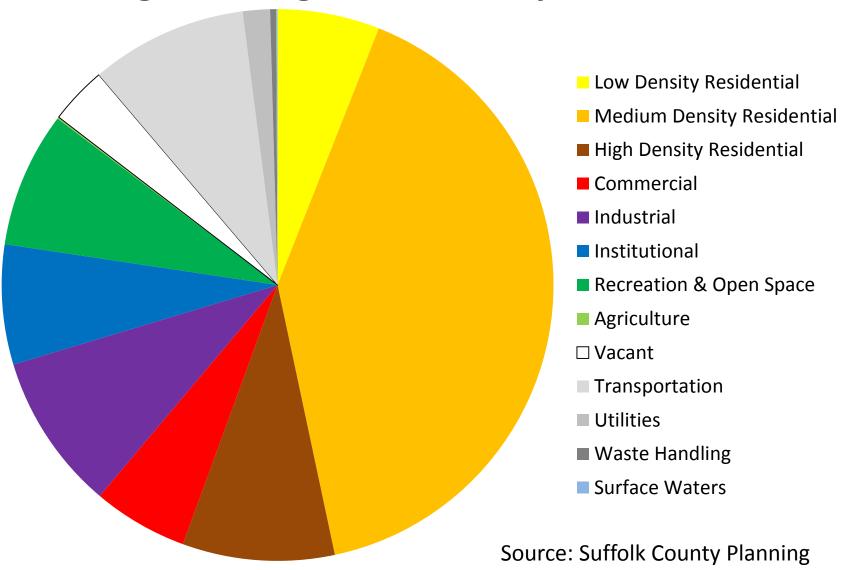
Population, by Town, 2010 Sagtikos Regional Development Area



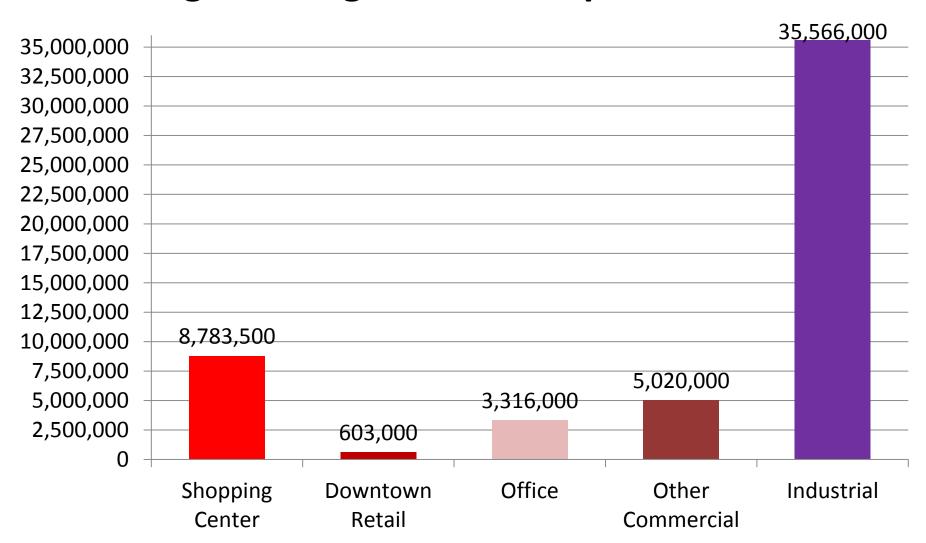
Acreage, by Town Sagtikos Regional Development Area



Land Use, in Acres Sagtikos Regional Development Area

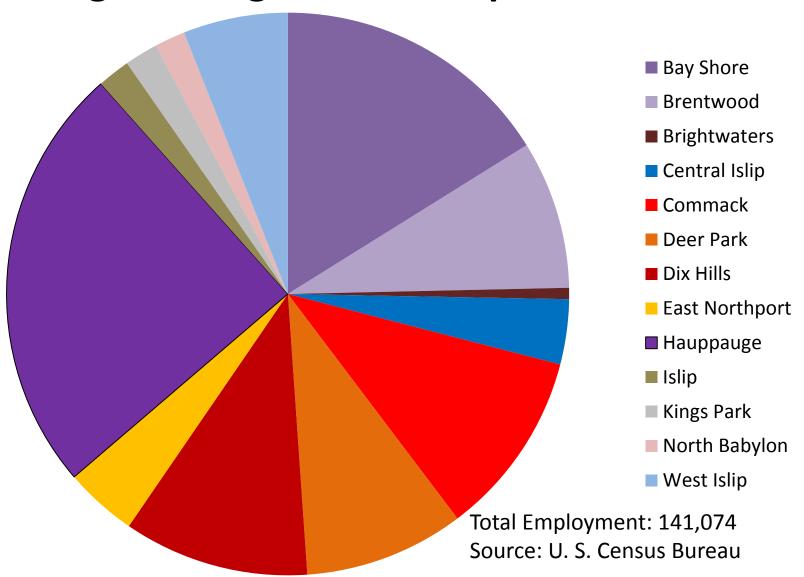


Square Footage of Selected Development, Sagtikos Regional Development Area



Source: Suffolk County Planning

Employment, by Community Sagtikos Regional Development Area



Sagtikos Regional Development Area Executive Summary and Addendum

Attachment A-3 - Charrette's Suffolk County Planning Commission Referral Process Power Point

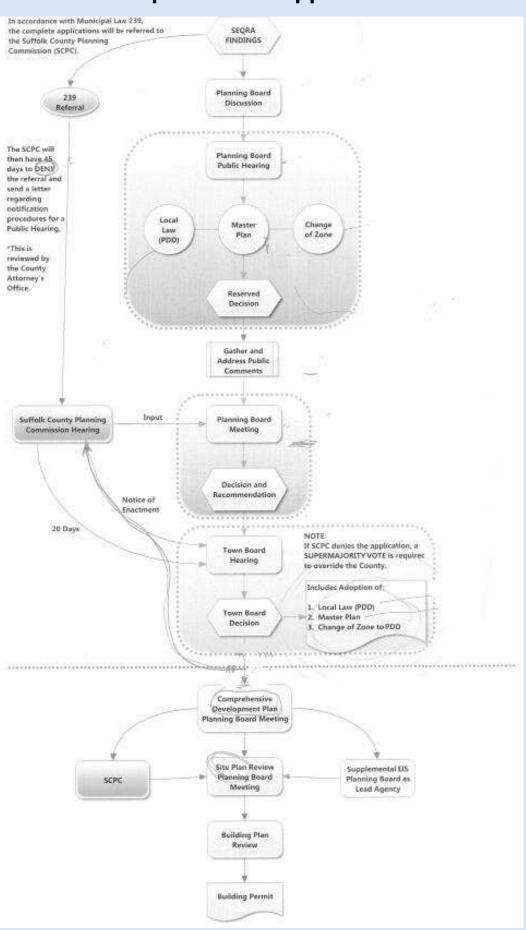
SAGTIKOS REGIONAL DEVELOPMENT AREA STUDY DESIGN CHARETTE



Suffolk County Department of Economic Development and Planning

September 3, 2015

Town of Islip Land Use Application Process

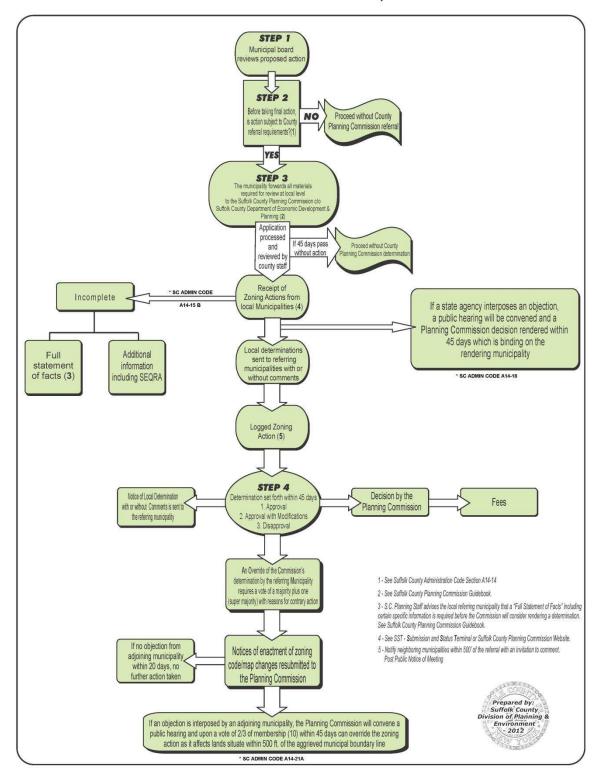


SUFFOLK COUNTY PLANNING COMMISSION REFERRAL FLOWCHART

Review of Zoning Actions by the

Suffolk County Planning Commission Pursuant to

Section A14-14 to 26 of the Suffolk County Administrative Code





• Feet

© 2013 Aerial Photography New York State Office of Cyber Security

650 1,300 1,950 2,600 3,250

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Thank You

Sagtikos Regional Development Area Executive Summary and Addendum

Attachment A-4 - Charrette's SketchUp Power Point



"...because nothing great was ever built that didn't start with a great drawing."

About





What is it good for?

- Collaborate and communicate with clients and community members
- Create compelling visualizations and walkthroughs
- Validate submitted project proposals
- Perform line-of-sight analyses
- Create solar shadow impact studies
- Build models from photographs
- Generate presentation document sets
- Import and export CAD and other types of data
- Integrate your 3D models into Google Earth
- Export PDFs, movies and images
- Access the world's biggest repository of 3D models



Sagtikos Regional Development Area Executive Summary and Addendum

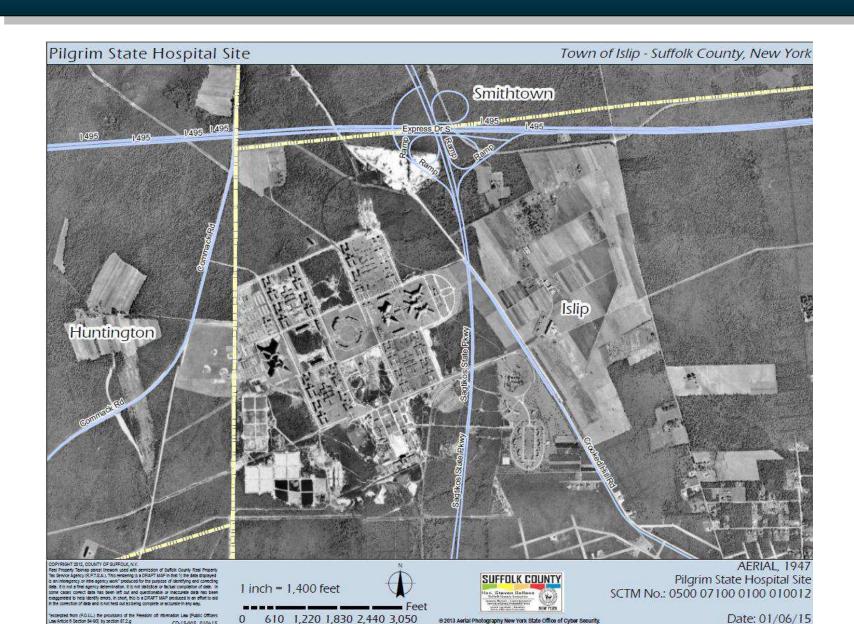
Attachment A-5 - Visualization Power Point

VISUALIZATIONS FOR THE SAGTIKOS REGIONAL DEVELOPMENT AREA STUDY

Update – September 24, 2015



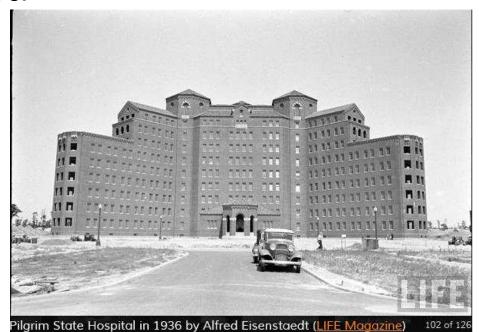
1947 Aerial



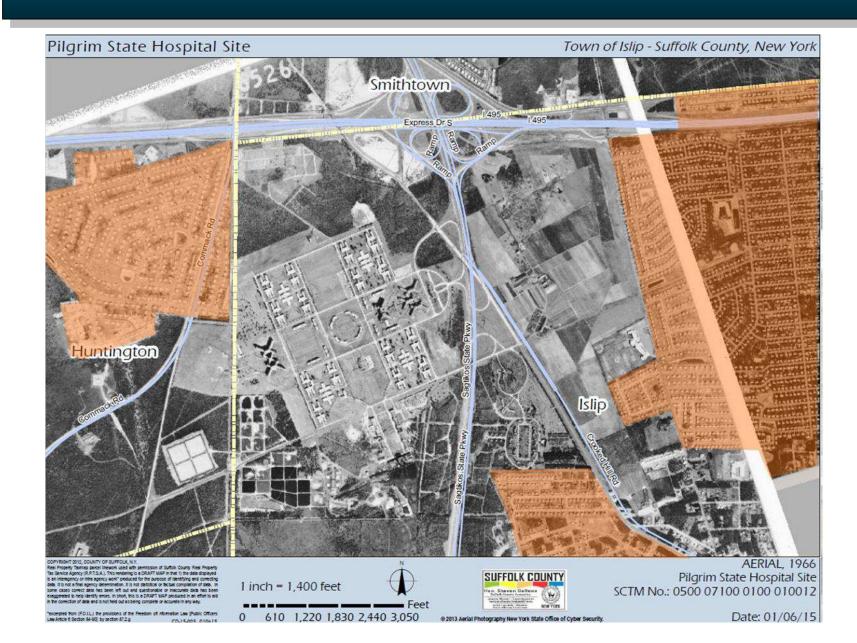
@ 2013 Aerial Photography New York State Office of Cyber Security.

Pilgram State Hospital –Early History

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 - The hospital had its own police and fire department, courts, post office, power plant, cemetery, water tower, and houses for doctors, psychiatrists, and asylum administrators.
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1966 Aerial

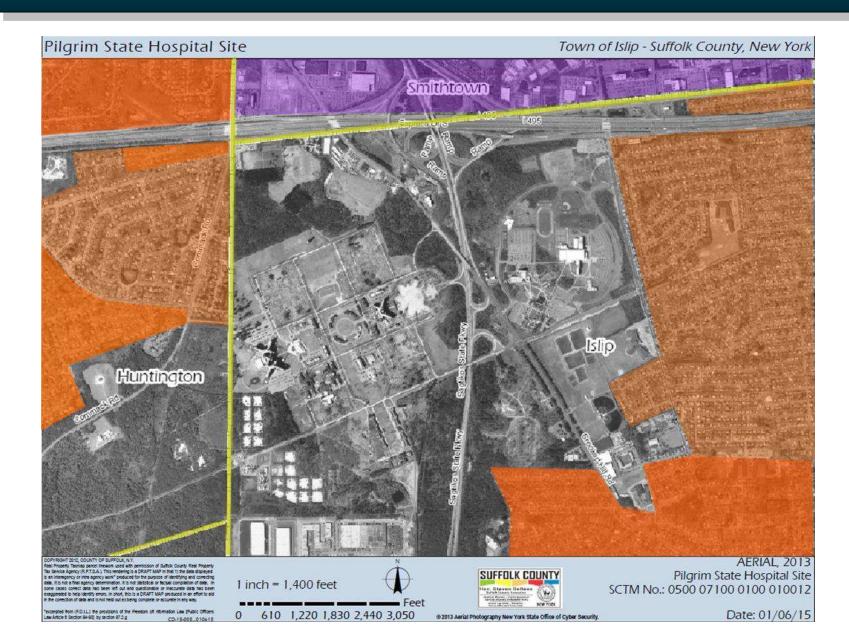


Pilgram State Hospital – Recent History

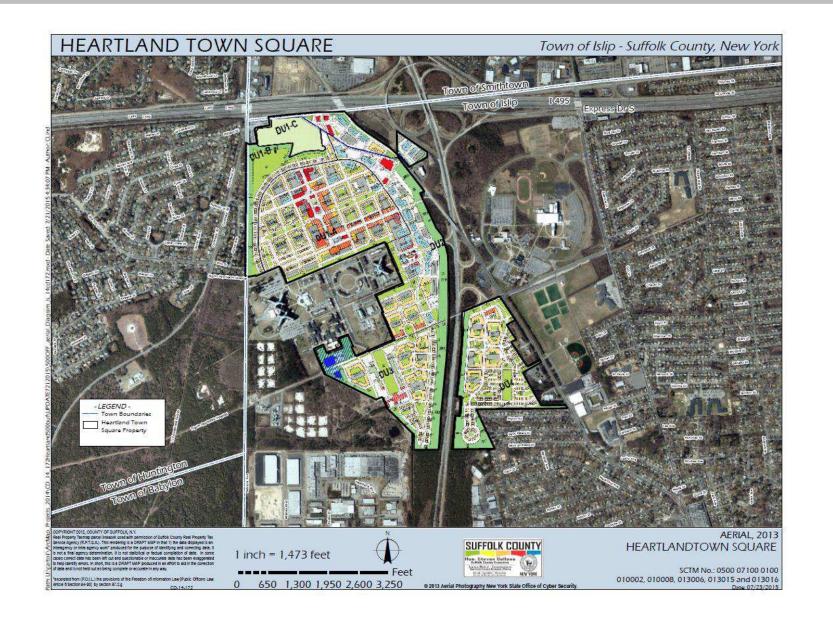
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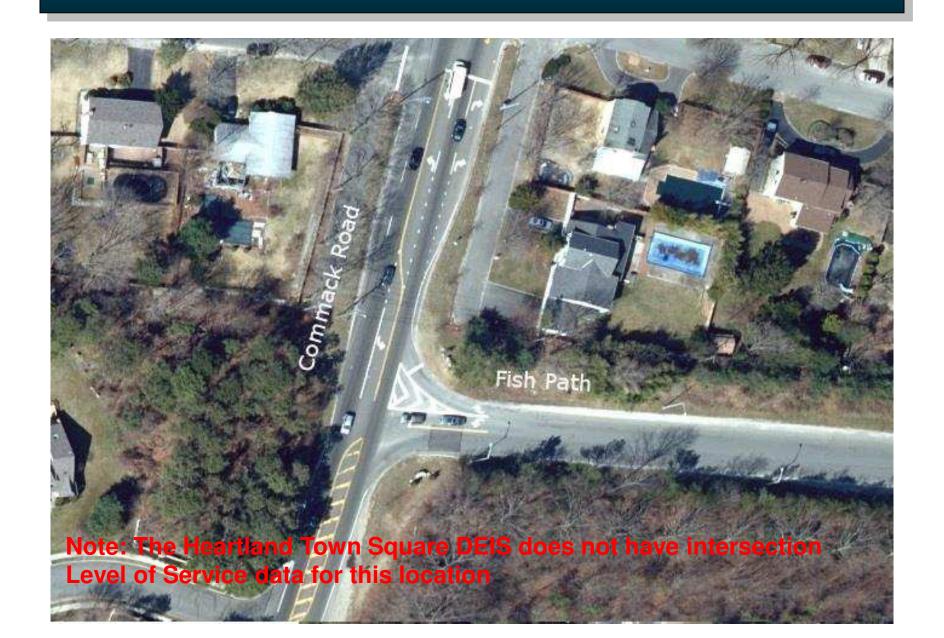
Current Day



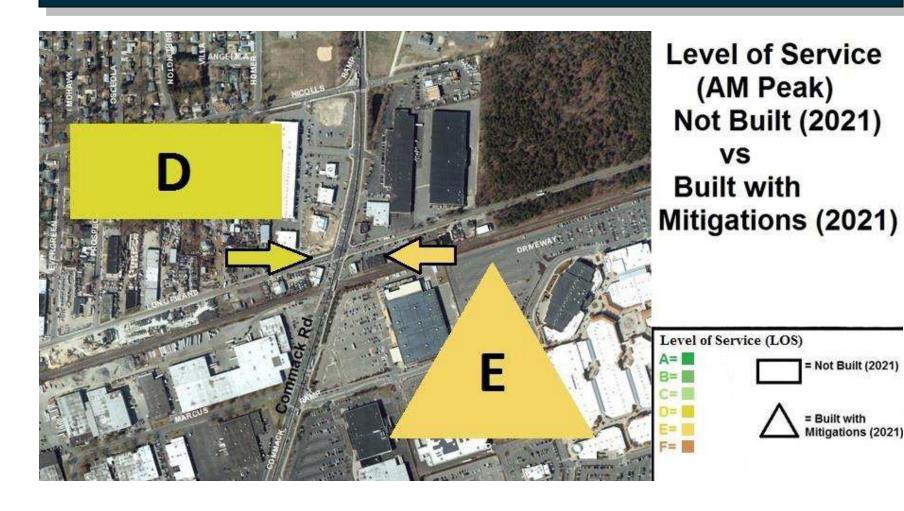
Heartland Town Square



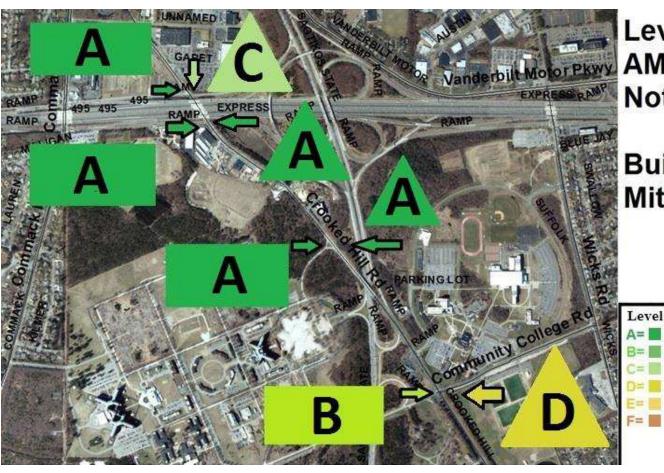
Aerial of Commack Road & Fish Path



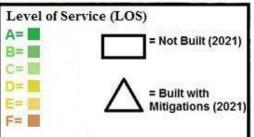
Commack Road & Long Island Avenue



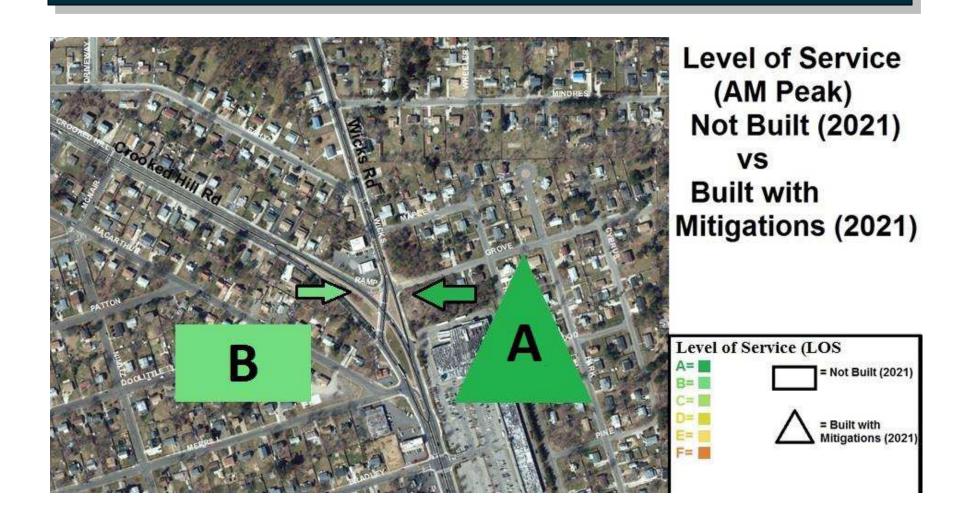
Crooked Hill Road AM Peak Level of Service



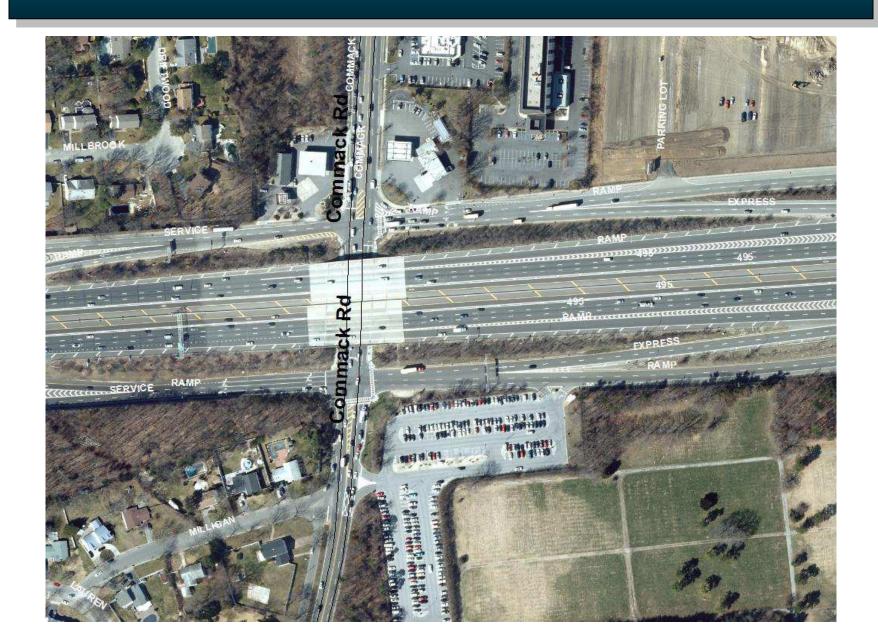
Level of Service
AM Peak
Not Built (2021)
vs
Built with
Mitigations (2021)



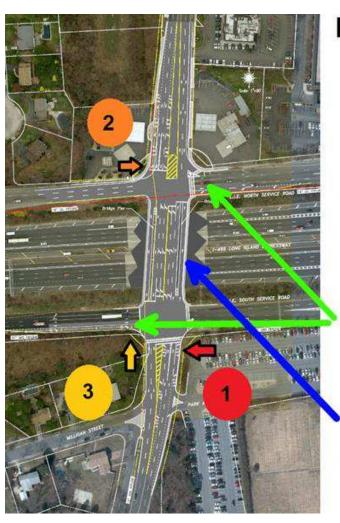
Crooked Hill Road AM Peak Level of Service



Aerial of Commack Road & LIE



Commack Road and LIE Traffic Mitigation



Mitigations

Right Turn Lanes

- 1. Northbound, Commack Road
- 2. Southbound, Commack Road
- Eastbound, LIE South Service Road

One Additional

Lane

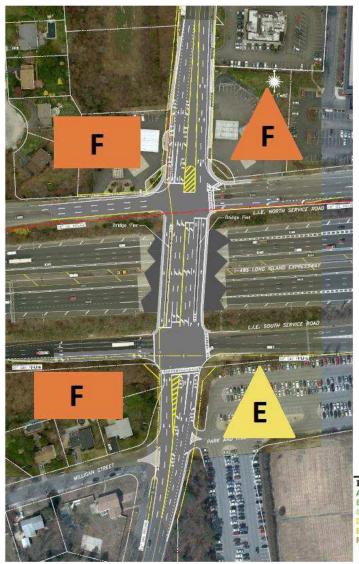
(Eastbound +

Westbound), LIE N & S Service Roads

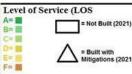
Widen Underpass

Add two Left Turn Lanes on Commack Road

Commack Road & LIE Intersection Normalized Capacity Utilization (ICU)



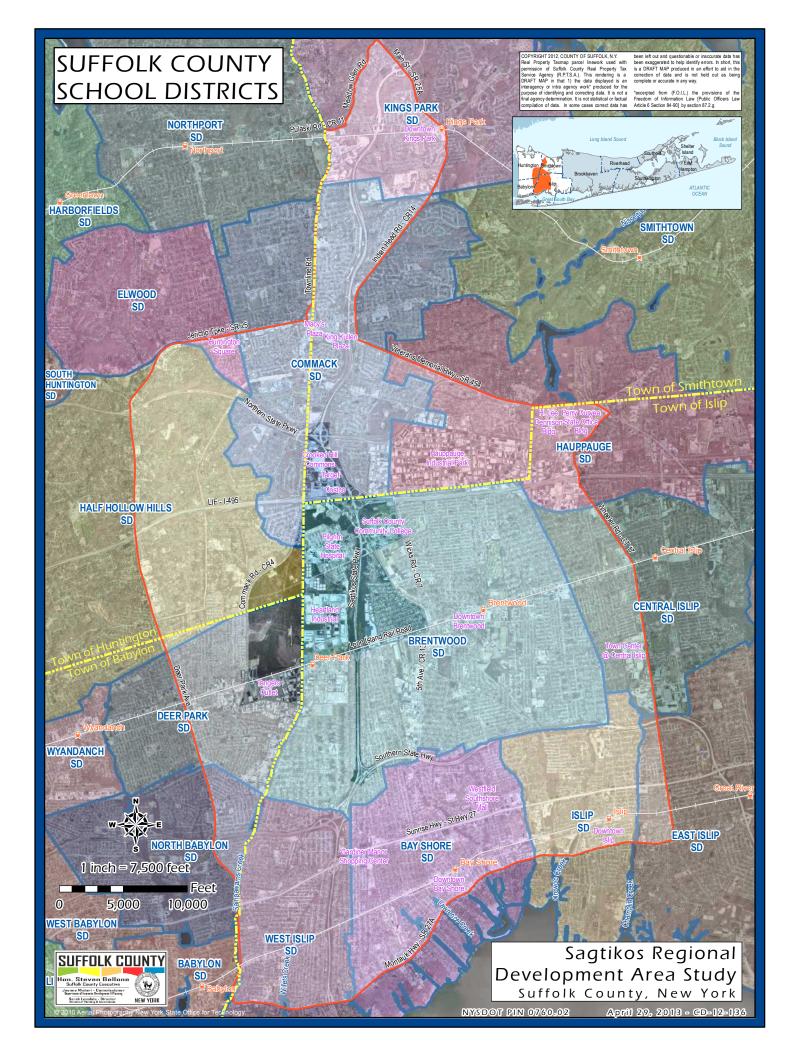
Level of Service (AM PEAK) Not Built (2021) vs Built with Mitigations (2021)



Thank You

Sagtikos Regional Development Area Executive Summary and Addendum

Attachment B - Suffolk County School District Map



Sagtikos Regional Development Area Executive Summary and Addendum

Attachment C - Inter-State, State and County Road Map

